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[M]T DOME HABITAT MANAGEMENT PLAN

ALTURAS RESOURCE AREA

SUSANVILLE DISTRICT

U.S. Department of the Interior

Bureau of Land Management

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MOUNT DOME HABITAT MANAGEMENT PLAN

U.S. Bureau of Land Management
Susanville District
Alturas Resource Area

July 1988
(First Draft, September 1985)

A plan for the protection and management of a Bald Eagle wintering and nesting area on public land in northern California.

U.S. DEPARTMENT OF THE INTERIOR

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A plan for the protection and management of a Bald Eagle wintering and nesting area on public land in northern California.

U.S. DEPARTMENT OF THE INTERIOR
Bureau of Land Management
Susanville District
Alturas Resource Area

Prepared by:
Robert N. Lehman
Wildlife Biologist

Approved by:

	Date
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Forest Supervisor, U.S. Forest Service, Modoc National Forest	3-11-88
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ABSTRACT

Over 500 Bald Eagles winter in the Klamath Basin of northeastern California and south-central Oregon each year, attracted by thousands of migrant waterfowl on five Federal wildlife refuges. Communal roosting occurs variably between October and March, depending on waterfowl movements and weather patterns, at five scattered locations in the basin. These areas are well timbered, have favorable microclimates, and provide eagles with important thermal cover at night and during inclement weather. Mt. Dome, in northeastern Siskiyou County, is the site of one such roost. Up to 250 eagles have been recorded in a relict stand of ponderosa pine near the summit of Mt. Dome; Mt. Dome is also the site of an occupied breeding territory.

Lands on Mt. Dome are administered by the U.S. Bureau of Land Management and U.S. Forest Service and are committed in part to protection and management of Bald Eagle habitat. This plan outlines those aspects of Bald Eagle ecology important to an assessment of short and long-range management needs on Mt. Dome, and identifies the actions and constraints necessary to the maintenance of site quality. Most public use issues and potential impacts are considered, including those associated with timber management, recreation, mineral exploration and development, range practices, fire suppression, and access. Implementation of planned actions will result in reduction of fire hazards, streamlining of fire suppression capabilities, improvement of timber stand characteristics, and maintenance of disturbance-free conditions. Accomplishment of all objectives will allow the eventual return of fire as an ecosystem process, and could lead to development of a cost-effective, fire-climax management regime which integrates silvicultural and fire-management systems.

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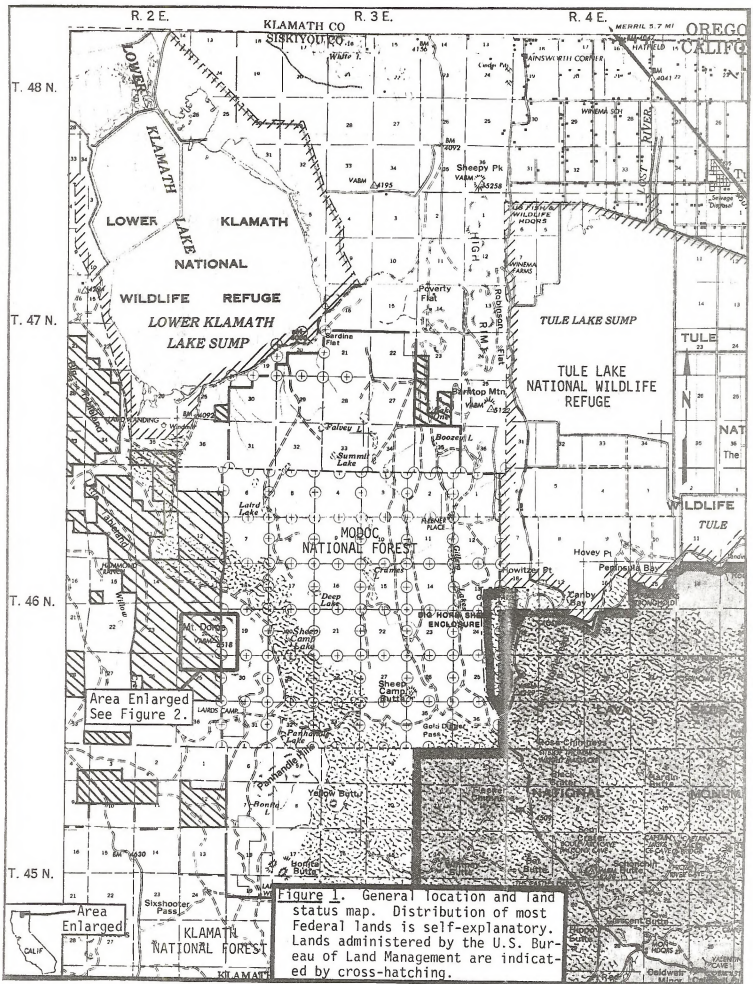
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R. 3 E.
R. 4 E.
T. 48 N.
T. 47 N.
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KLAMATH CO
SISKIYOU CO
LOWER KLAMATH LAKE NATIONAL WILDLIFE REFUGE
LOWER KLAMATH LAKE SUMP
TULE LAKE SUMP
TULE LAKE NATIONAL WILDLIFE REFUGE
MODOC NATIONAL FOREST
KLAMATH NATIONAL FOREST
Area Enlarged See Figure 2.
Area Enlarged
Sheepy Pk
Poverty Flat
Sardine Flat
Barnes Valley Cr
Barnes Valley Rd
Barnes Valley Res
Barnes Valley Pk
Barnes Valley Trail
Barnes Valley Spring
Barnes Valley Flat
Barnes Valley Mdws

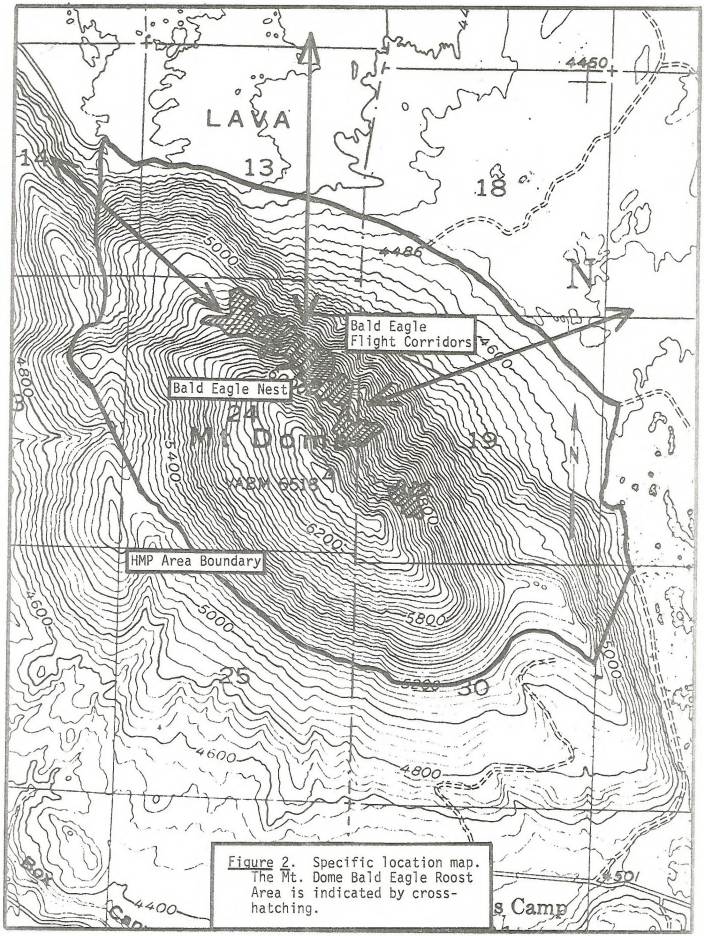

Figure 2. Specific location map. The Mt. Dome Bald Eagle Roost Area is indicated by cross-hatching.

Form 6780–1
(July 1981)
(formerly 6620–1)

UNITED STATES
DEPARTMENT OF THE INTERIOR
BUREAU OF LAND MANAGEMENT

CHECKLIST FOR PREPARATION AND REVIEW OF HABITAT MANAGEMENT PLANS

State: California
District: Susanville
Resource Area: Alturas Resource Area
HMP Name and Number: Mt. Dome Habitat Management Plan
HMP Prepared by: Robert N. Lehman

REVIEW CHECKLIST	SURNAME	DATE
1. Master Memorandum of Understanding, Sikes Act Agreement and/or Supplemental with State Agency.		
2. Preliminary meeting(s) with State Agency *(or other appropriate cooperators)* to jointly discuss HMP objectives.		
3. Endangered Species Act Compliance completed by ~~sent~~ 12/15/86	P. Rowe	4/11/86
4. Review by District/Resource Area Specialists		
~~Range~~ N/A		
~~Wild Horse and Burro~~ N/A		
Hydrologist	KJW	2/20/86
Forestry	[illegible]	12/15/87
Fisheries/Botanist/Wildlife Biologist	[illegible]	1-9-86
Lands	PH	12-14-87
Minerals	RB See Comments	3-3-86
Recreation	KJ	4-17-86
Wilderness/ACEC	KJ	4-17-86
Cultural	[illegible]	1-6-86
Visual	[illegible]	4-17-86
Environmental Coordinator *(reviews EAs)*	D w/ comments	12-15-87
Support *(Chief of Operations/Fire Management)*	RJB	12-18-87
Others		
5. Reviewed by Area Manager		
6. Reviewed by Chief of Resource Management		
7. Draft HMP and EA reviewed by State Agency authorized officer *(or other cooperators).*		
8. Final review *(if appropriate)* by State Director		
9. Reviewed and approved by District Manager		
10. Approved by State Agency authorized officer		

Remarks

I. INTRODUCTION

A. Scope of the Plan

This plan outlines short- and long-term measures needed to secure threatened habitat for Bald Eagles (Haliaeetus leucocephalus) on public lands in the Klamath Basin of northeastern California. Bald Eagle habitat in the designated management (HMP) area is contained within a 75-acre stand of ponderosa pine (Pinus ponderosa) near the summit of Mt. Dome, in northern Siskiyou County. This timber stand is used as a communal roost each year by up to 250 wintering eagles, and as a nesting area by a single, probably resident, breeding pair.

Fire risks associated with steep slopes and overgrown conditions on Mt. Dome, and the typically dry climate of the region, pose a primary threat to all lands in the HMP area. Fuels are concentrated within dense stands of mountain shrubs on the slopes below the roosting and nesting area, and in thickets of white fir (Abies concolor) within the timber stand itself. Excessive fuels could lead to partial or virtual loss of Bald Eagle habitat on Mt. Dome in the event of a wildfire. White fir presence suggests an additional threat: a decline in ponderosa pine dominance, with the eventual loss of the native climax community, and the preferred habitat type, in a white fir transition. The unnaturally high fuel accumulations and shifts in plant succession which currently threaten Bald Eagle habitat on Mt. Dome are largely a result of the exclusion of fire in this century, under full suppression policies.

Short-term measures needed to reduce the threat of wildfire and to regain stocking control of ponderosa pine are emphasized in this plan. Eight of 11 planned actions are designed to reduce fire hazards, streamline fire suppression capability, and improve timber stand structure.

Long-term measures needed to secure habitat for Bald Eagles on Mt. Dome are outlined in three planned actions, two of which deal with public use and management policies in and near the HMP area. Currently, a wide measure of protection is provided by the site's remoteness and inaccessibility, and by general management policies in the region which emphasize range and wildlife values. Public use is negligible at this time; these planned actions are designed to maintain disturbance free conditions into the future.

In a final planned action a 15-year review of management efforts is proposed. During this review, the effects of completed fire hazard reduction and timber stand improvement measures and management direction in the post-review period would be addressed. It is assumed at this time 1) that the course of management in the post-review period will be determined in large part by the need to prevent recurrence of the overgrown, stagnant conditions which presently exist on Mt. Dome, and 2) since those conditions were caused by over suppression of fire, that any long-term course, by necessity, will prescribe the use of fire in the HMP area. It is suggested that the most effective prescription for the return of fire to Mt. Dome would be one which incorporates the natural fire regime which existed prior to full suppression policies, i.e., under a fire-climax management regime.

In summary, this plan is designed to improve Bald Eagle habitat on Mt. Dome while preparing for the return of fire. Essential elements of the plan include an aggressive schedule of management actions aimed primarily at short-term control of fuels and ponderosa pine competitors, and the eventual implementation of a fire-climax management regime for long-term control.

B. Justification

The rationale for long-term maintenance of Bald Eagle habitat on Mt. Dome, under a natural fire regime, reflects recent, widespread changes in the perception of fire's role within many ecosystems, and the importance of integrating fire management concerns with overall land management objectives. It reflects, also, a growing awareness of the importance of ponderosa pine within Bald Eagle habitats in much of the western United States.

In California, habitat use by breeding and wintering Bald Eagles was examined in silvicultural terms by Lehman (1979), Lehman et al. (1980), and Keister (1981). Results of these and other studies indicate that the tree most often selected for nesting, roosting, and perching in northern California is a ponderosa pine occupying a canopy (overstory) or supercanopy position. Over 70 percent of nest trees examined in California were ponderosa pine (Lehman 1979).

Ponderosa pine is highly intolerant of shade. The species typically regenerates and occupies subcanopy positions (intermediate size classes) only within clearings and other forest openings in which the canopy has been wholly or partially lost during a disturbance of some type. Without such transitions, "tolerant" species, including white fir, Douglas-fir (Pseudotsuga menziesii), and incense-cedar (Libocedrus decurrens), tend to become established below and eventually replace ponderosa pine overstories. Historically, ponderosa pine was maintained and reached its greatest development in "fire-climax" communities (Kozlowski and Ahlgren 1974), in which periodic wildfires initiated transitional stages.

Management of a fire-climax on Mt. Dome would allow a return to the natural, self-regulating cycle of light burning and regrowth under which ponderosa pine forests in the region evolved. The open-grown conditions required for pine regeneration, control of shade-tolerant competitors, long-term stocking control, and periodic fuel reduction, would be accomplished by frequent, low-intensity fires of natural and human origin. Under such a regime, management costs would be reduced by reducing the need for the expensive, labor-intensive measures which were necessary prior to its implementation. Derived benefits would include an increase in ponderosa pine productivity and, as intended, the maintenance of Bald Eagle habitat.

C. Background

The habitat needs of Bald Eagles in California have been addressed in BLM planning documents since at least 1975 (e.g., Hoffer and Smith 1975). Most habitat management efforts at that time were confined to administrative closures at nest sites, roosts, and other eagle use areas, and to protection of those areas from land conversions, developments, and other direct impacts. However, as our understanding of Bald Eagle habitat use in California increased in later years, it became increasingly evident that protection alone within traditional eagle use areas would not meet future habitat needs. Thus, in several pioneering efforts since 1980, habitat management plans for Bald Eagles have been developed in California which include assessments of species compositions, size-class structures, stocking densities, etc., of ponderosa pine, and which consider silvicultural options for long-range regeneration of ponderosa pine overstories (Hawks 1982, Burke 1983, and Spiegel 1984). Interestingly, in one case (Hawks 1982), the use of prescribed fire was recommended and to date has been used successfully to reduce fuel loading and the threat of wildfire in the HMP area.

Today, the necessity of a more active role in the fate of timberlands important to Bald Eagles in California is accepted (in theory, if less in practice) by many concerned professionals. The importance of ponderosa pine, the special circumstances required for the species to flourish, and the aggressive, on-the-ground measures needed to reverse trends linked to fire exclusion are generally understood. As a result, a trend towards more aggressive management of Bald Eagle habitat in California is developing. This plan is designed to further that trend.

D. Plan Development

This management plan represents a synthesis of much which is currently understood about Bald Eagle ecology and management of the species' habitats. Plan development was based on an extensive review of literature pertaining to Bald Eagle management in general, ecology of Bald Eagles in the Klamath Basin, the silvics of ponderosa pine (Appendix I), and the role of fire in ponderosa pine ecosystems (Appendix II). In addition, overall management trends and potential resource use conflicts at Mt. Dome were assessed during a review of BLM planning documents--including the Mt. Dome Planning Unit Resource Analysis (URA) (U.S. Bureau of Land Management 1979), and the Mt. Dome Planning Unit Management Framework Plan (MFP) (U.S. Bureau of Land Management 1981)--and through personal contacts with representatives of other Federal and state agencies which administer public lands and wildlife populations in the area. Finally, moderate field efforts conducted by the Alturas Resource Area biologist, seasonal aids, volunteers, and the author, during 1984 and 1985, contributed to the general assessment.

A considerable volume of information contained within published papers, unpublished reports, and other works specific to Bald Eagle ecology in the Klamath Basin was indispensable to the development of this plan. These included Forbis (1975), Krauss (1977), Camarena (1978), Goold (1981),

Issacs and Silovsky (1981), Keister (1981), Anthony et al. (1982), Keister and Anthony (1983), and Frenzel and Anthony (1984). The availability of this information allowed development of the plan without the necessity of an extensive field effort.

E. National, Regional, and Statewide Status of Bald Eagles

Breeding Populations:

The importance of the Klamath Basin to Bald Eagles, and the implications of future habitat losses there, can be fully appreciated only in national and regional contexts. The Bald Eagle is currently classified as endangered in 43 of the conterminous 48 states, including California; it is classified as threatened in Washington, Oregon, Minnesota, Wisconsin, and Michigan; and is unlisted in Alaska (1973 Endangered Species Act, as amended). Yet, the results of nationwide breeding surveys indicate an overall upward trend in productivity and in the number of breeding pairs.[1]

In California, the results of recent breeding surveys are also encouraging. Since 1979, annual productivity has been well above the level of 0.7 young per breeding pair suggested by Sprunt et al. (1973) as the minimum required for population stability (Lehman 1983). Furthermore, a moderate population increase and range expansion seems to be under way. Between 1979 and 1983, three to four previously unrecorded occupied nests were located each year; seven were recorded in 1984.[2] It is unlikely that all of these nests were missed in previous surveys. Some pairs are believed to represent additions to California's breeding population.

An increase in the number of known breeding pairs is also apparent in the 7-state Pacific Recovery Region (U.S. Fish and Wildlife Service 1984).[3] A total of 290 pairs were verified in 1980 (the first year in which complete surveys were performed in all seven states). In 1984, 451 pairs were confirmed. Much of this increase undoubtedly is due to more intensive survey efforts. However, as in California, the increase in part seems to represent additions of new breeding pairs. Productivity also seems sufficient to suggest that a moderate population increase is under way in the region: a mean of 1.06 young were produced in all seven states between 1980-84.

---

[1]Approximately 1500 breeding pairs of Bald Eagles were verified in the conterminous 48 states in 1983 (Green pers. comm.). Productivity was about 1.00 young per pair (Cline 1984).

[2]Use at 65 Bald Eagle nests was verified in 1984, an increase of 30 percent since 1979. Mean productivity 1979-84 was 1.09 young per pair.

[3]See Table 1 for a listing of states.

Table 1. Regional, state, and national results of the National Wildlife Federation's annual mid-winter Bald Eagle survey: 1979-1982. California did not participate in the survey in 1983 and 1984.

Year	Klamath Basin[1]	California	7-State Region[2]	National
1979	572	830	4,304	9,815
1980	627	772	4,597	13,046
1981	501	711	4,370	13,689
1982	510	872	3,562	13,825
Means	552	796	4,208	12,594
	(13% of regional total)	(19% of regional total)	(33% of national total)	

[1]Total number of Bald Eagles observed each year in the Klamath Basin represent combined survey results from Oregon (Opp pers. comm.) and California (Detrich 1981, 1982). In California, yearly survey results are as follows (percent of all Bald Eagles observed in California which occurred in the Klamath Basin are given in parentheses): 1979-405(49); 1980-323(42); 1981-256(36); 1982-383(44).

[2]The seven-state region designated in the draft Pacific States Bald Eagle Recovery Plan (U.S. Fish and Wildlife Service 1984) includes Washington, Oregon, California, Nevada, Idaho, Wyoming, and Montana.

If these increases are real, and if they continue, then increasing habitat management and protection efforts will be necessary to ensure that habitat needs are met. Such efforts ultimately will contribute to the recovery and delisting of the species.

Wintering Populations:

Over 500 Bald Eagles have been censused in the Klamath Basin every year since 1979 (Hainline pers. comm.). A peak concentration occurred in January 1980 when 627 eagles were counted during the National Wildlife Federation's annual mid-winter survey (Table 1). Eagles generally arrive in late October, peak in January, and have departed by late March (Keister 1981). Concentrations in the Klamath Basin represent the greatest known use of a single Bald Eagle wintering area in the lower 48 states.

A mean of 33 percent of all Bald Eagles censused in the lower 48 states during the National Wildlife Federation's annual mid-winter surveys (1979-82) occurred in the 7-state region; 13 percent of all eagles in the region occurred in the Klamath Basin (Table 1). If migrant Bald Eagle populations are more or less static after arriving in the Klamath Basin (remaining in the area throughout the winter period), the 13 percent represents the mean upper limit of individuals from the 7-state region which depend on the Klamath Basin in any given year, and will benefit from management efforts. However, if migrant populations are largely dynamic (if interchange of individuals between the Klamath Basin and other wintering areas in the Pacific Region occurs on a regular basis), then many times more individuals may depend on the Klamath Basin each year, in a flux of hundreds at any given time. The management implications in this case are more profound: management of Bald Eagle habitat in the Klamath Basin may benefit a potentially large percentage of Bald Eagles in western North America.

The results of recent studies suggest that interchange of migrants between wintering areas does occur. Young (1983) found that some Bald Eagles which originate from breeding populations in northeastern Alaska and the MacKenzie District, Northwest Territories, Canada, and which gather during the fall months in Glacier National Park in northern Montana to feed on spawning kokanee salmon (Onchorynchus nerka kennerlyi), ultimately move into the Klamath Basin. Hunt (pers. comm.) confirmed that a single adult eagle marked on the Skagit River in western Washington moved to the Klamath Basin and then returned to the Skagit later in the same winter; and that three of seven subadults which moved from the Pit River in northeastern Shasta County, California, to the Klamath Basin, returned to the Pit River area three weeks later.

F. History of Bald Eagle Use in the Klamath Basin

The extent of Bald Eagle use of the Klamath Basin prior to the winter of 1964-65 is unknown (Keister 1981). Censuses of eagles at the Tule Lake and Lower Klamath National Wildlife Refuges began in 1964 concurrently with U.S. Fish and Wildlife Service (FWS) waterfowl censuses. Census results between 1964 and 1976 indicate that less than 200 eagles were wintering in the Klamath Basin in that period.

An increase in the number of Bald Eagles wintering in the Klamath Basin was observed in the winter of 1976-77 (Keister 1981). Concurrent with observed increases in eagle use, an increase in the evidence of fowl cholera was observed in wintering waterfowl populations. Prior to 1976, fowl cholera die-offs were prevalent only during spring migrations. However, beginning in 1976, fowl cholera was detected from November through March. The increase in Bald Eagle occurrence on the refuges after 1976 was highly correlated with this increase in waterfowl mortality (Keister 1981). Other possible explanations for the observed increase of Bald Eagle use after 1976 include 1) greater waterfowl mortality due to lead poisoning and crippling during the hunting season, 2) losses of habitat elsewhere, and 3) an increase in the region's Bald Eagle populations.

Communal roosting by Bald Eagles at three sites in the Klamath Basin was first described by Krauss (1977). Roosting presently occurs at five primary locations (Keister 1981). The Mt. Dome roost is located 4.5 miles south of Lower Klamath Lake; the Caldwell roost is 10 miles south of Tule Lake; the Cougar roost is 1 mile south of the Caldwell roost; the Three Sisters roost is 10 miles south of Lower Klamath Lake; and the Bear Valley roost is 8 miles northwest of Lower Klamath Lake. Bear Valley is just across the Oregon border and is the only one of the five roosts not in California.

Historical use of the five known roosts is not well understood, though accounts from local residents indicate that the Bear Valley roost was in use as long as 80 years ago, and the Three Sisters roost as long as 50 years ago (Krauss 1977). The Three Sisters roost, located in January 1975, was the first to be officially recognized, followed by the Caldwell and Cougar roosts, located in December 1976. The Bear Valley roost was recognized in January 1977. The Mt. Dome roost, verified in November 1978, was first described by Keister (1981).

During the winters of 1978-79 and 1979-80 relative use of the four known roosts was greatest at the Bear Valley roost (31 percent and 42 percent, respectively, of all roosting eagles observed during the two winters), followed by Mt. Dome (28 percent and 35 percent, respectively). Use of the Caldwell roost was more variable decreasing from 27 percent in 1978-79 to 8 percent in 1979-80. Use of the Three Sisters roost was consistent at about 15 percent during both winters (Keister 1981).

Roost counts at Mt. Dome have been conducted since November 1978, but have occurred on an irregular basis since Keister completed work there in March 1980. Available records indicate that use of the Mt. Dome roost has been highly variable both within and between years. Distinct peaks occurred on two and three occasions during the winters of 1978-79, 1979-80 (Keister 1981), and in 1983-84, 1984-85 (Roush pers. comm.).[1] Peak use occurred (in order by years as shown above) in late December and early February; early January, mid January, and early February; mid January and late February; and mid December and late December. Roost count results have ranged between a high of nearly 250 eagles in mid January 1980 to less

[1]Data are not available for 1981 and 1982.

than 5 eagles in the first week of January 1984. Roost counts exceeded 100 on at least two occasions, in three of the four winters for which data were available. A high of 75 eagles were recorded by the author in February 1984, however, only six roost counts were conducted that winter, and higher numbers of birds may have occurred. Keister (1981) suspected that periodic waterfowl movements between refuges and changes in weather accounted for variable Bald Eagle use at the Mt. Dome roost.

G. Characteristics of the Mt. Dome Winter Roost Site

The roost site is located near the summit of Mt. Dome in a 75-acre stand of virgin timber dominated by ponderosa pine.[1] The stand occurs on a northeast-facing slope at elevations ranging from approximately 5,400 feet to 6,200 feet above sea level. The site is in Section 24, T. 46 N., R. 2 E., and Section 19, T. 46 N., R. 3 E.

The timber stand on Mt. Dome is believed to be a relict stand of an ancient coniferous forest which once occurred throughout northeastern California and has declined through geologic time as a result of drier climates (Diehl pers. comm.). Destruction of this ecosystem would represent a critical loss of Bald Eagle habitat and loss of what may be a unique genetic variety of ponderosa pine. Research on the characteristics of this timber stand could prove valuable for improving timber production on marginal sites in northern California. Such considerations, along with the site's inaccessibility, led in 1980 to the removal of the Mt. Dome timber stand from BLM's allowable cut base (U.S. Bureau of Land Management 1981).

Keister (1981) described roost tree and timber stand characteristics on Mt. Dome in considerable detail (however, only the stand component which includes trees equal to or above 12 inches in breast-height diameter were examined). Mean roost tree characteristics did not differ significantly from mean stand characteristics.

Mean age of roost trees was 250 years; mean diameter was 25 inches (range: 20-32 inches); and mean height was 89 feet (range: 51-110 feet). Of 278 roost trees examined, 29 (10.4 percent) were snags, and 18 (6.5 percent) were trees with spiked tops. Mean stocking density of trees with diameters exceeding 12 inches was 26 stems per acre.

Ninety-six percent of trees with diameters of at least 12 inches and 100 percent of trees used for roosting were ponderosa pine. White fir comprised 3.6 percent of this component but were not used. Less than 1 percent of trees examined were incense-cedar and western juniper (Juniperus occidentalis). Species composition in the stand component consisting of trees with diameters less than 12 inches in general were reversed. White fir dominates in much of this component and ponderosa pine occurs only in

[1]Only two other areas in BLM's Mt. Dome Planning Unit support commercial timber stands: an 80-acre stand of ponderosa pine occurs on Sheep Mountain (T. 46 N., R. 1 E., Section 29); and a 10-acre ponderosa stand occurs one mile north of Mt. Dome (T. 45 N. R. 2 E., Section 11).

scattered openings. The important management implications of this fact are discussed elsewhere (refer to the Introduction, to Planned Action 4, page 22, and to the Silvicultural Prescription, page 54).

Stocking densities in the understory are variable and are associated with species compositions. In general, density increases from the northwest corner to the southeast corner of the stand. In the northwest corner, the understory is comprised of ponderosa pine at low stocking rates. Moving southeast, stand density increases as white fir composition in the understory increases. Dense thickets of fir characterize the understory in about 60 percent of the timber stand.

II. ECOSYSTEM DESCRIPTION

Mt. Dome is located 13 miles south of the Oregon border within BLM's Mt. Dome Planning Unit. The planning unit lies mostly in northeastern Siskiyou County, but also includes a portion of northwestern Modoc County. Mt. Dome lies in a sparsely populated agricultural area composed of two distinct subregions: Butte Valley and the Tule Lake Basin. The entire unit falls within the Klamath Basin and is socially and economically linked to the city of Klamath Falls, Oregon (Champlin 1979).

A. Climate[1]

The main factors influencing the climate of volcanic uplands in northeastern California are elevation, which averages 4,500 to 5,510 feet above sea level, and the rain shadow effect of the Cascade Mountains to the west. Mean annual precipitation in the area is 14 to 18 inches, though above 6,000 feet, on Mt. Dome for example, mean annual precipitation is 22 inches. Most precipitation occurs as snowfall between October and May, peaking in January. Up to 30 inches of snow have been recorded at higher elevations. Occasional localized heavy thunderstorms occur during the summer.

Droughts are frequent in the area. In one year out of four less than 10 inches of precipitation can be expected, and one-third of all years will have less than average rain and snowfall. Relative humidity averages 75 percent in the winter, and 10 to 20 percent in the summer--which contributes to high fire danger during the drier months. The growing season is short: from 80 to 115 days, averaging 105 days.

Recorded temperature extremes are 103°F to -27°F. Mean, daily maximum temperatures range from 84°F in summer to 38°F in winter. Mean daily minimum temperatures range from 51°F in summer to 21°F in winter. Except in August, September, and October, prevailing winds are from the south and west.

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[1]From: U.S. Department of Commerce, National Climatic Center, 1966-78; U.S. Weather Bureau, 1965. Climate of Siskiyou County.

B. Physiography and Geology

The Mt. Dome Planning Unit lies in a transition zone between the Modoc Plateau Geomorphic Province to the east and the Cascade Range Province to the west (California Division of Mines and Geology 1969). To the south lies the Medicine Lake Highlands; further east, the Great Basin Province; and to the north, the Basin and Range Province of Oregon (Franklin and Dryness 1973).

In the Modoc Plateau and Basin and Range Provinces, northwest-to north-trending faulted blocks dominate the landscape. Intervening basins occur between the faults, in which fragmental and flow basalts, shield type volcanos, composite cones, cinder cones, and water-laid sediments (e.g., diatomite) occur. Mt. Dome is a faulted lava dome which rises to 6,518 feet above sea level. The Big and Little Tablelands immediately adjacent to Mt. Dome are steep sided, basalt-capped lava plateaus which rise to 4,500 feet above sea level and 380 feet above the surrounding plains. Minimum elevation in the planning unit is at the Tule Lake sump (4,050 feet), and maximum elevation is at the summit of Mt. Dome.

C. Minerals

The only currently verified mineral deposits on the planning unit are diatomite deposits, one of which is associated with the Big and Little Tablelands and Mt. Dome. Forty-three mining claims are on record for this area. Assessment work has occurred on the Tablelands in the past, and more recently, but no development is currently under way on any of these claims. In August 1985, however, a claimant cat-trenched an area between the Big and Little Tablelands as part of an initial assessment (Teixeira pers. comm.). The site is 4 miles northwest of the Bald Eagle roost on Mt. Dome.

The similarity of the unit's geologic history to other areas in California has led to speculation regarding the potential for oil and gas development and for development of geothermal energy (Baily 1966). Between 140 million and 2 million years ago, alternating geologic periods occurred during which volcanic eruptions and large basalt flows were followed by periods of stability and sedimentation. The sediments of the Sacramento Valley are very similar in age and character to those of the Klamath Basin, however, the basaltic cover is absent. These sediments are currently yielding large quantities of oil and gas.

There is presently no oil and gas exploration occurring on the Mt. Dome Planning Unit, and the California Energy Commission considers the potential for geothermal development to be low to moderate (Champlin 1979). Other potential for mineral development in the future could include mining for volcanic cinders, sand, and gravel (which has occurred in the past in the planning unit, though on a small scale), and development of metallic minerals (gold, silver, and mercury) if deposits are found below the basaltic mantle of the Klamath Basin.

D. Soils

An Order III soil assessment[1] was performed on Mt. Dome by the U.S. Department of Agriculture (USDA), Soil Conservation Service (SCS), in 1978 (Diehl pers. comm.). Soils were classified in the Kalo Series, a common soil type of mountain slopes, and in the Mollisol Family, a family of loamy-skeletal, mixed, frigid Ultic Argixerolls. Thus, soils on Mt. Dome are moderately deep (20-40 inches), well drained, composed of at least 35 percent rock fragments, have low available soil moisture, and have moderately slow permeability. The soil profile includes an increasing percentage of clay with increasing depth. Soil temperature at a depth of 20 inches is less than 40°F. Soils here were formed from parent material of extruded igneous rock. The Kalo Series has a low general site index for ponderosa pine.

E. Vegetation

Major vegetation changes have occurred on the Mt. Dome Planning Unit since 1900, with the loss of native big sagebrush (Artemisia tridentata) and perennial grassland communities to invasions by western juniper (Juniperus occidentalis) and annual grasses. These changes apparently resulted from a variety of man-caused factors (U.S. Bureau of Land Management 1979). One primary factor was the exclusion of wildfire as an ecological force. Before 1900, natural fires and fires set by native Americans controlled juniper invasions and maintained native vegetation. With the advent after 1910 of complete fire suppression policies, juniper increased in density and less desirable, introduced annual grasses became established.

The loss of fire also allowed expansion and overgrowth of mountain shrub communities in many areas where juniper did not dominate. Such areas are now dominated by old, tree-like shrubs which provide little browse for wildlife. Overgrazing in the early period of the century also contributed to the above conditions.

Vegetation on disturbed soils in the Mt. Dome Planning Unit is currently dominated by a juniper steppe woodland with varying understories of big sagebrush, bitterbrush (Purshia tridentata), rabbitbrush (Chrysothamus spp.), and annual and perennial grasses. Cheatgrass (Bromus tectorum) is the most prolific of the invading annual grasses. Except for those areas in commercial timber, the slopes of Mt. Dome itself are dominated by old, often dense stands of curlleaf mountain mahogany (Cercocarpus ledifolius), with some manzanita (Arctostaphylus spp.), and juniper, and an associated understory of perennial forbs and the perennial bunchgrass Idaho fescue (Festuca idahoensis).

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[1]Order III soil assessments are performed on 40-acre plots (mapping units), as opposed to the mapping units of 15 acres and 1-2 acres of Order II and Order I assessments, respectively.

F. Water Resources

The Mt. Dome Planning Unit is part of the Central South Pacific Hydrologic Region and the Klamath River Sub-Basin. Surface drainage flows into two drainage units: Tule Lake Drainage Basin in the eastern half of the planning unit; and Butte Valley Basin in the western half (U.S. Bureau of Land Management 1979).

Many of the area's ground water basins--including those associated with the Tule Lake sump, Lower Klamath Lake, and Butte Valley--are closed systems. Most water which is not consumed or retained in the soil mantle percolates into the lava substructure. Depending on annual precipitation, however, seasonal standing water may occur in numerous small basins and intermittent reservoirs. Availability of free water is ensured only at the larger lakes and reservoirs, such as Lower Klamath Lake and Tule Lake, where water regimes are highly controlled by irrigation.

Before development of the Klamath Basin occurred, Lower Klamath Lake and Tule Lake were part of a series of large natural marshes of approximately 185,000 acres.[1] Through the 1920's and 1930's agricultural development steadily increased in the area. During the 1930's, the Civilian Conservation Corps reclaimed a large portion of Tule Lake for agriculture, reducing the lake to a quarter of its former size. By 1940, tunnels connecting Tule Lake with the Klamath River, and Lower Klamath Lake with Tule Lake, were constructed and water levels were being regulated for long-range preservation of waterfowl habitat.

Lower Klamath Lake is approximately 4.5 miles north of Mt. Dome, and retains about 28,000 acres of open water and marsh in the winter and 9,000 acres in the summer. Tule Lake is approximately 8 miles to the east and northeast. It retains about 9,000 acres of water throughout the year.

G. Fisheries and Wildlife

Lower Klamath National Wildlife Refuge, established in 1908, was the nation's first wildlife refuge. Tule Lake National Wildlife Refuge was established in 1928. These refuges are part of a complex of one state and five Federal waterfowl refuges in the Klamath Basin. A sixth Federal refuge includes the Bear Valley Bald Eagle roost.

Throughout this century the wildlife refuges of the Klamath Basin have supported a traditional and stable food source for wintering Bald Eagles in the Pacific Northwest. Before development occurred, the immense and undisturbed marshes attracted fall peak populations of 6 million waterfowl. Today, as a result of management efforts on the refuges, one-time use peaks of one-half to one million waterfowl still occur during fall and spring migrations. Because some species overwinter in the area, and others are resident, a year-round food source for wintering and breeding Bald Eagles is assured.

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[1]From FWS brochure: Wildlife of Klamath Basin National Wildlife Refuges--California-Oregon.

Most lakes and reservoirs on the Mt. Dome Planning Unit are too shallow or too intermittent to support coldwater or warmwater sport fisheries, and both are almost nonexistent (U.S. Bureau of Land Management 1979). Water temperatures become too high in the summer and freeze-up in the winter is too severe for most species. The only substantial fisheries in the planning unit are those supported in Lower Klamath Lake and Tule Lake. In addition to waterfowl, these fisheries represent an important food source for Bald Eagles. Over 20 species of fishes occur in the two reservoirs.

Bald Eagles in the Klamath Basin feed extensively on mountain voles (Microtus montanus) displaced by annual, late winter-early spring flooding of fields (Keister 1981). Other mammalian prey species which may be of varying seasonal or local importance include jackrabbits and hares (Lepus spp.) and ground squirrels (Spermophilus spp.). Livestock and mule deer (Odocoileus hemionus) carrion may be used during the winter months.[1]

In addition to impressive numbers of waterfowl (33 species), and Bald Eagles, the Klamath Basin is important to at least 220 species of birds. In the case of raptors, 17 diurnal species and 10 species of owls occur here. Some of these, e.g., the Golden Eagle (Aquila chrysaetos), are resident but experience impressive population increases during the winter; others, e.g., the Rough-legged Hawk (Buteo lagopus) are common migrants. The Long-eared Owl (Asio otus), a resident species which also experiences winter population increases, roosts communally during the winter. On 20 February 1984, the author and the Alturas Resource Area biologist located a communal roost of these owls in a large juniper near the Little Tablelands (T. 46 N., R. 2 E., NE¼ of the NE¼ of Section 3). At least 25 individuals were observed at this roost.

Mt. Dome and the nearby Tablelands apparently support a number of breeding raptors. During a late-summer 1984 field effort by the author and BLM seasonal aides, adult Golden Eagles (and an immature) were observed frequently and were presumed to have bred locally. A previously recorded Golden Eagle nest (U.S. Bureau of Land Management 1979), located approximately 200 yards downslope of the occupied Bald Eagle nest (see below), was not used in 1984. American Kestrels (Falco sparverius) were observed quite often and were also presumed to have bred on Mt. Dome. The cliff faces on three rock formations on the lower slopes of Mt. Dome were explored extensively, and two Prairie Falcon (Falco mexicanus) eyries were located (see Spangle and Roush 1984 for details). Adult prairie falcons were observed on numerous occasions. At least 21 breeding pairs of Swainson's Hawks have been verified within a 6-mile radius of Mt. Dome and the Tablelands (Hawks pers. comm.).

While investigating recent spring-summer records of adult Bald Eagles in the area, an occupied Bald Eagle breeding territory on Mt. Dome was confirmed by the author on 9 July 1984. The nest site is in the SE¼ of the

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[1]The Mt. Dome area provides crucial winter range for the Mt. Dome deer herd. The herd migrates each spring to summer ranges near Mt. Shasta and on the Medicine Lake Highlands. A herd of pronghorn (Antilocapra americana) also occurs near Mt. Dome.

NE¼, Section 24, T. 46 N., R. 2 E., on BLM-administered lands. The nest tree, a ponderosa pine, with a height of approximately 100 feet and a DBH of 35 inches, is on a northeast-facing slope at an elevation of approximately 5,900 feet. At the time of its discovery, two nestlings between 10 and 12 weeks of age were observed in the nest.[1] The Mt. Dome nest site is the southernmost breeding territory in the Klamath Basin; 70 breeding territories have been verified in the Klamath Basin north of the Oregon border (Frenzel and Anthony 1984).

Mt. Dome is the site of a historic Peregrine Falcon (Falco peregrinus) breeding territory. During development of this plan, a plan for the reintroduction of Peregrines on Mt. Dome was also developed (Spangle and Roush 1984). Refer to the section on coordination with other BLM programs (page 31) for guidelines on interfacing the two plans.

H. Environmental Contaminants

Frenzel and Anthony (1984) studied Bald Eagle food habits, productivity, and chemical residues in Bald Eagle tissues, eggs, and prey species in south-central Oregon. A summary of their findings follows:

Contamination of the prey base in the Klamath Basin is fairly low for most organochlorines and heavy metals. However, PCBs, DDE, and mercury are present in the system and show definite biomagnification in the food chain. Avian prey is the apparent source of elevated burdens, and the largest amount of avian prey is taken during the winter and early spring. Translocation of contaminants by migrating birds, and lead as imbedded shot, may pose a hazard because of large numbers of wintering waterfowl and heavy hunting pressure.[2] Concentrations of mercury are presently too low to result in the severe physiological damage associated with higher levels; it probably occurs naturally in the aquatic system. Direct adverse effects of DDE are apparent in the reproductive performance of some breeding pairs in the Klamath Basin and along with other residues may be indirectly increasing impacts of other factors. The relationship between DDE-caused eggshell thinning and reproductive performance, however, was not statistically significant. The degree of thinning found is not generally associated with declines at the population level. In general, most residues in the Klamath Basin's aquatic systems are low in comparison to many watersheds throughout the United States.

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[1]Two young were also produced in 1985 (Roush pers. comm.).

[2]On 26 August 1985, in U.S. District Court for the Eastern District of California, Sacramento, use of lead shot for waterfowl hunting in the Lower Klamath and Tule Lake National Wildlife Refuges was banned. This decision was upheld on 4 October by the U.S. Circuit Court of Appeals, San Francisco.

I. Fire History and Protection

Relationships between present and past fuel levels, distributions of plant communities, grazing practices, and the loss of frequent, low-intensity fire as an ecological force are complex and not entirely understood. It is clear, however, that fire--and the absence of fire--have contributed in important ways to present conditions in many areas of the Mt. Dome Planning Unit.

The stand of ponderosa pine on Mt. Dome exhibits the effects of recent and past wildfires in a variety of ways. The existence of the stand itself is indicative of a long fire history (Appendix II). Fire periodically reduced fuels, controlled invading species, maintained ponderosa pine regeneration by creating openings, and contributed to an uneven distribution of age classes. Evidence of recent fires is obvious throughout the stand: fire scars are present on many overstory trees and on dead and down materials, and the present size class distribution is a result in part of fires which occurred in this century.

Two fires which occurred in 1941 and 1944 apparently resulted in a loss of many saplings; thus, pole-sized timber is presently understocked in the areas burned. The 97,780-acre Mammoth-Barn Top fire occurred in 1941, and the 17,695-acre Twin Sisters-Mt. Dome fire occurred in 1944. Both burned considerable acreages on Mt. Dome (Interstate Deer Herd Committee 1954). The severity of these fires was probably related to the fuel build-up which occurred after the advent of full suppression policies early in this century.

Though only a few minor fires have occurred on Mt. Dome in recent years, fires on the planning unit have occurred regularly. In a 14-year period (1963-1977), 17 fires were suppressed: 1 from debris burning, 2 due to recreational use, and 14 due to lightning strikes. The largest fire burned 400 acres, but most were under 5 acres or were spot fires. Fifty percent of the fires occurred in July and August and were associated with lightning strikes. Two of the three man-caused fires occurred in October and were associated with hunter use (U.S. Bureau of Land Management 1979).

Fuel loading on Mt. Dome is currently at a critical level, and catastrophic loss of or serious damage to timber in the Bald Eagle roost is a real possibility if a severe wildfire occurs under drought conditions or under stressed fire suppression capability. Steep slopes and old, dense stands of mahogany and manzanita on Mt. Dome's southwest and northeast slopes (Appendix III) could allow propagation of a fire into the timber stand. Heavy ground-based fuels (dead and down materials, brush, litter, and duff), and fuel ladders associated with dense thickets of white fir in the understory, could propagate fire through the timber stand, into the crowns of intermediate size classes, and finally through the canopy.

Fire protection on the Mt. Dome Planning Unit is primarily the responsibility of the California Department of Forestry (CDF) and the U.S. Forest Service (USFS). Because the HMP area is divided roughly in half by a BLM-USFS property line, fire protection there is shared by the two agencies. Bureau lands in Siskiyou County, including lands in the HMP area, are protected by CDF's Siskiyou Ranger Unit. Other Federal lands in

the county are under protection by the Klamath National Forest. The National Park Service (NPS) and FWS also have fire protection responsibilities in the area (Burnham pers. comm.).

In view of the many agencies with fire suppression responsibilities in and near the HMP area, it is essential that fire protection activities are well coordinated. Each of the respective suppression agencies which might respond in the event of a fire on Mt. Dome must be knowledgeable of suppression priorities in the area and the special procedures which may be necessary in the HMP area.

J. Human Resources and Public Use

The human population of the Mt. Dome Planning Unit in 1979 was estimated at 3,000, two-thirds of which resided in Butte Valley (Champlin 1979). Two incorporated cities (Dorris and Tulelake) and four small communities are present in the planning unit. Klamath Falls, Oregon, approximately 30 miles northeast of Mt. Dome, is the nearest trade center, with an estimated population of 38,000 in the greater metropolitan area.

The local economy is based primarily on agriculture. Because population growth in the area will be dependent primarily on expansion of agriculture, and since most of the land suitable for cultivation (e.g., 85 percent of the Tule Lake Basin) is already under irrigation, only modest increases are expected. Both Butte Valley and the Tule Lake Basin decreased in population between 1960 and 1970; however, an increase to 3,500 residents in the planning unit is expected by 1990 (Champlin 1979).

Production of livestock, potatoes, onions, hay, and grain are the principal agricultural activities on the planning unit. Livestock grazing is the most important public use of BLM lands (26 allotments are presently in use by 17 permittees). Other public uses of BLM lands are infrequent due in part to current BLM policy which emphasizes rangeland and wildlife habitat improvements (e.g., through the use of prescribed burns, mechanical brush control, and seeding to reestablish native perennial grass communities), and which deemphasizes other values (e.g., recreation).

Public use of nonagricultural lands in the planning unit is limited mostly to tourism and hunting, the former having probably the greatest potential for increases in demand. Tourism is highest at the Lower Klamath and Tule Lake National Wildlife Refuges, and is only slightly lower at the Lava Beds National Monument 6 miles east of Mt. Dome.

Cultural values could contribute to an increase in tourism if archaeological resources in the area were more developed. Known cultural resources include prehistoric sites dating back 5,000 years, recent sites formerly occupied by the Modoc Indians and their forebears, and a number of areas where petroglyphs occur. Development of such areas has occurred only within the Lava Beds National Monument. Some petroglyphs are present on Mt. Dome; however, development of these sites is unlikely because of their inaccessibility and because sites on the monument are of higher quality.

Hunting pressure on the Mt. Dome deer herd is presently low relative to pressures on other herds in northern California. No hunter-use figures are available (Pyshora pers. comm.). Deer hunting occurs largely before the arrival of deer on their winter range near Mt. Dome, during what is typically a 16-day season which ends by 20 October each year. Thus, deer hunters have generally left the area by the time migrant Bald Eagles begin to arrive. Contact between hunters and eagles is more likely during waterfowl and pheasant season (mid-October through December) on eagle foraging areas in the wildlife refuges north of Mt. Dome.

The demand for other undeveloped recreational values on the planning unit is presently very low but could increase in the future. Given the interesting topography and geological formations of the area, use of visual and scenic resources, for example, would probably increase if access were improved. Improved access could also result in increases in off-road vehicle (ORV) use, use by hunters, hikers, campers, etc. Access to BLM lands is currently limited to approximately 36 miles of single-lane, primitive roads most of which require all-wheel drive vehicles in the winter. One of these roads passes one mile north of the HMP area. Approach of the HMP area from this road is possible only on foot over steep, difficult terrain. The occasional hunter or hiker may enter the HMP area, but disturbance there, overall, is negligible.

K. Summary: Ecosystem Description

The goals of managing and protecting Bald Eagle habitat on Mt. Dome are not in conflict and can be integrated with other land uses. Most lands in the planning unit are under management for compatible values, e.g., as rangelands, waterfowl refuges, national parks, reclamation areas, and national forests. The HMP area is naturally buffered by its remote location and severe terrain, it is threatened by no proposed or ongoing developments, and the timber stand itself is not included in BLM or USFS cut bases. An intensively managed and local food source exhibiting low contaminant levels is available.

Threats to the Bald Eagle roost area do exist, however, and can be summarized in three potential "worst cases": 1) destruction of the timber stand during a severe wildfire, 2) long-term successional loss of preferred ponderosa pine to less desirable "tolerant" species, and 3) unexpected growth of the area's human population resulting in increasing demand for timber, forage, recreation, and minerals.

III. AUTHORITY/RELEVANT CONSTRAINTS

Authority for protection of Bald Eagles and their habitats and for development of this management plan is provided by a number of Federal and state laws and by BLM policies, manual directives, and MFP decisions:

A. Bald Eagle Protection Act of 1940. Prohibits as a criminal offense the taking, possession, or destruction of Bald Eagles and Golden Eagles or any part, egg, or nest thereof.

B. Federal Land Policy and Management Act of 1976 (FLPMA). This is BLM's fundamental legislative mandate. FLPMA requires the Bureau to develop or revise land-use plans so that scarce resource values are considered, gives priority for protection of scarce resources, and includes fish and wildlife development as a principal or major use of public lands.

C. Endangered Species Act of 1973, as amended. As a listed species the Bald Eagle is afforded broad protection under this legislation. Section 7 requires consultation with the U.S. Fish and Wildlife Service by all Federal agencies when their activities may jeopardize the habitats of endangered species.

D. The Sikes Act of 1960 (Title II, Section 202(c)(3)). Provides protection for fish and wildlife considered to be rare, threatened, or endangered by a state agency, in this case by the California Fish and Game Commission. Provides for the preparation and implementation of joint BLM-State habitat management plans for endangered species.

E. BLM/CDFG Master Memorandum of Understanding, dated July 1982. Requires that the Bureau notify and confer with the California Department of Fish and Game regarding all projects involving impacts to, or manipulation of, state-listed rare and endangered plants and wildlife. This was established under Sikes Act authority.

F. BLM Manual Sections 6840.06 and 6840.2. It is BLM policy to protect, conserve, and manage state-listed endangered or threatened animals and their habitats, and to use Bureau authority in furtherance of the purposes of the Endangered Species Act or similar state laws.

G. California Species Preservation and California Endangered Species Acts of 1970 and 1984. In the first case authority was provided for inventory of rare wildlife and for establishing criteria for determining if a species or subspecies is threatened or endangered. In the second case authority was provided for listing of endangered species by the California Fish and Game Commission. There is no direct mandate to preserve, protect, or enhance the habitats of such species. However, habitat management for state-listed rare and endangered species is mandated somewhat indirectly through Federal laws and policies.

H. Management Framework Plan Decisions. Bureau of Land Management policy and direction specific to the Mt. Dome Planning Unit, to Mt. Dome itself, and to the Bald Eagle roost site are outlined in the Mt. Dome Planning Unit Management Framework Plan (U.S. Bureau of Land Management 1981). Of four use class alternatives[1] considered for overall management direction, a moderate use (Class III) policy was adopted. Under Moderate Use Class III the full range of resource values will be managed for, limited by the constraints of individual resource values:

1. Wildlife needs will be a major consideration, but livestock grazing will be managed to maximize forage production and minimize

[1]Primitive Use Class I; Limited Use Class II; Moderate Use Class III; or Exclusive use Class IV.

conflicts. Allocation of vegetation and development of water resources will be done to serve both livestock and wildlife needs.

2. If diatomite deposits on the Tablelands are developed, the Bureau will work with the claimant to ensure that other resource values are considered and protected while mining activity is taking place.

3. Vehicle use of the area will be restricted to existing roads and trails. Roads will be maintained in their present primitive condition.

4. Areas with historical values (e.g., relating to the Modoc War) will be protected as necessary.

5. A habitat management plan will be developed to ensure protection of Bald Eagle habitat on Mt. Dome.

Other important recommendations and constraints outlined in the Mt. Dome Planning Unit MFP which are relevant to protection and management of Bald Eagle habitat include:

1. Development of a special fire operations plan outlining coordination between BLM, the California Department of Forestry, and the U.S. Forest Service regarding fire suppression operations and use of controlled fire in management activities. Recommendation 17 (see MFP Prescription Alternatives for Mt. Dome and the Tablelands) indicates that natural fires could contribute to overall management objectives.

2. Promotion of wildlife values in the Mt. Dome-Tablelands area in part by limiting access and development of recreational values.

3. Permission of furbearer trapping where no conflict exists with protection of Bald Eagles and other raptors.

IV. LAND STATUS/ADMINISTRATION

The Mt. Dome Planning Unit encompasses approximately 458,000 acres of Federal, state, and private land, of which some 261,000 acres are under Federal withdrawal by the U.S. Fish and Wildlife Service, U.S. Forest Service, National Park Service, U.S. Bureau of Reclamation, and the U.S. Bureau of Land Management (Figure 1).

The planning unit includes approximately 40,000 acres of land administered by the Bureau of Land Management through its Alturas Resource Area and Susanville District offices. In general, BLM lands are scattered throughout the planning unit; however, they are well blocked on the west side of Mt. Dome and on the Tablelands. Lands on the east side of Mt. Dome are administered by the U.S. Forest Service, Modoc National Forest, Alturas.

All lands encompassing the Mt. Dome HMP area are administered by BLM and Modoc National Forest. Approximately 1,135 acres in the HMP area are

BLM-administered, 1,015 acres are USFS-administered, for a total of 2,150 acres (Figure 2).

Over 22,200 acres of BLM-administered lands on and near Mt. Dome were withdrawn in 1961 and designated as the Mt. Dome National Cooperative Land and Wildlife Management Area (U.S. Federal Register 1961). This withdrawal restricts conveyance of title of the lands involved, in effect mandating that they remain in public ownership. However, the withdrawal has no bearing on surface or subsurface mineral rights.

V. MANAGEMENT OBJECTIVES

Primary Objectives

1. Prevent loss or destruction of timber on Mt. Dome to wildfire and improve suppression capability.

2. Improve timber stand characteristics and ensure long-range regeneration and overstory recruitment of ponderosa pine.

3. Provide year-round, disturbance-free conditions within the HMP area, and prevent resource use conflicts.

4. After all other objectives have been accomplished, integrate fire management and silvicultural programs into a fire climax management regime.

Secondary Objectives

1. Reduce fuels, construct fuelbreaks, and improve suppression crew access, to minimize fire hazards in the HMP area.

2. Establish fire suppression priorities, clarify operating procedures, and improve coordination between all suppression and support agencies.

3. Reduce ponderosa pine competitors within existing timber stands and maintain stand sanitation.

4. Promote regeneration of ponderosa pine, expand the existing timber base, and establish a regular schedule of silvicultural entries for stand improvements.

5. Maintain species compositions, stocking densities, and crown closures within specifications outlined in this plan and create the multi-storied, open-grown conditions favorable to a ponderosa pine climax.

6. Promote public use values on the Mt. Dome Planning Unit which are compatible with general range and wildland management goals and which do not conflict with the specific objectives of this management plan.

7. Restrict activities in the HMP area to those necessary for research, implementation of planned actions, and monitoring, and limit the duration and timing of activities in accordance with HMP guidelines.

VI. PLANNED ACTIONS[1, 2]

1. Develop a special operating plan for wildfire suppression on Mt. Dome. Amend all existing cooperative fire protection agreements and protection plans of and between agencies with fire protection or support responsibilities on Mt. Dome, with regard to suppression priorities and special procedures. Identify Mt. Dome as a priority suppression area.

   Discussion

   BLM fire management personnel should prepare an operating plan prior to the beginning of the 1986 fire season. The plan should outline protection needs, suppression problems, notification and initial attack procedures, suppression resource restrictions, and other guidelines specific to this unique suppression area.

   Formal amendment and attachment of the operating plan or its outlined procedures to protection agreements or protection plans, as appropriate, should be requested in writing by BLM's Susanville District Manager. The following administrators and agencies have protection or support responsibilities on or near Mt. Dome and should be notified regarding the proposed amendments:

   Regional Chief, California Department of Forestry, Redding;
   Forest Supervisor, Klamath National Forest, Yreka;
   Forest Supervisor, Modoc National Forest, Alturas;
   Park Superintendent, Lava Beds National Monument, Tulelake; and
   Refuge Manager, Klamath Basin National Wildlife Refuge, Tulelake.

2. Construct two unimproved helispots on Mt. Dome.[3]

   Discussion

   Planned Action 2 will facilitate transport of work crews, equipment, and materials during fire suppression, fuels reduction, and timber

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[1]Manpower needs, costs, and schedules for completion of planned actions in most cases are not discussed in this section. Refer to the HMP Implementation Costs Summary (page 34), and the Implementation Schedule (Appendix X) for this information. Scheduling restrictions are explained in Planned Action 9 (page 25).

[2]Use of low cost California Department of Corrections (CDC) Conservation Camp field crews has occurred in some BLM programs, but seems unlikely in the case of Mt. Dome. Transport of crews to the HMP area on a daily basis is precluded by remote location, extreme terrain, and excessive cost. During most planned actions requiring work in the field, crews will spend some nights, by necessity, at temporary base camps in or near the HMP area. Supervision of CDC crews under such circumstances would be difficult.

[3]An unimproved helispot lacks permanent structures and landing site markers, as opposed to an improved helispot where such structures and markers are usually present.

stand improvement operations in the HMP area, and will eliminate access difficulties which otherwise would restrict effective operations of any kind on Mt. Dome. Overland routes to Mt. Dome (unpaved roads, jeep trails) are not maintained, and approach of the HMP area is possible only on foot over steep, sometimes hazardous terrain. Such limitations could become critical in the event of wildfire in the HMP area.

Completion of one unimproved helispot on Mt. Dome before the end of FY 1986 is highly recommended. Both should be completed before the end of FY 1987. Two landing site locations are proposed (Appendix IV); combined they will place all areas above an elevation of 5,200 feet within a one-mile striking distance by ground crews. Helispots should be identified in the fire suppression operating plan (Planned Action 1) and ranking fire officers in all suppression and support agencies should be informed of their locations.

3. Enclose the timber stand on Mt. Dome within a 2.5-mile-long system of fuelbreaks.

Discussion

Given heavy fuel loads on Mt. Dome, outbreak of wildfire at some future date is a certainty. Catastrophic loss of timber or reduction of site suitability due to wildfire represent the greatest short-term threats to the HMP area. Planned Action 3 will reduce a wildfire's resistance to control and will streamline suppression crew movements on the ground.

Fuel loading and associated fire hazard varies in the HMP area. Brush density is very high on the upper southwest slopes of Mt. Dome, for example, but is considerably less on northeast slopes below the roost area. The configuration of fuelbreaks should reflect these differences (Appendix V).

Construction of a fuelbreak system could be completed by BLM fire suppression crews, or as a cooperative effort with USFS fire crews. Work crews should set up a base camp at or near the east helispot and should expect to spend some nights on Mt. Dome. Given the magnitude of this action, the difficult working conditions, and the need to complete an extensive fuelbreak system in the short time between cessation of Bald Eagle breeding activity and the arrival of winter migrants, maintenance of a high degree of efficiency and crew morale will be important.

4. Reduce fuel loading and control white fir on approximately 75 acres of the HMP area.

Discussion

Planned Action 4 will accomplish a number of objectives necessary to the implementation of other planned actions and to the long-range success of timber stand improvements: 1) fuels and fuel ladders will be reduced, 2) openings for pine regeneration will be created, 3) seed

beds will be scarified, 4) stand density will be reduced, 5) pine competitors will be controlled, and 6) thrifty pines in understocked size classes will be released.

Four White Fir Control Areas have been delineated for treatment in four consecutive years (Appendix VI). The size of control areas, in general, reflects white fir density and fuel loading in each area. Control Area 1, for example, has considerably less fir and other fuels and, at 30 acres in size, is larger than the other areas.

Treatments should begin in the fall of 1988 and continue in accordance with the HMP implementation schedule (Appendix X). Targets for stand density and white fir composition are given in the Silvicultural Prescription (Appendix VIII). Residues should be stacked for burning in the openings created during white fir control efforts, in firelines constructed during implementation of Planned Action 3, and/or within natural fuelbreaks (e.g., scattered lava beds) below the treatment areas.

5. Control dense brush on approximately 30 acres of the HMP area.

Discussion

The primary goal of Planned Action 5 is the reduction of heavy fuels associated with old, dense stands of mountain mahogany and manzanita, which lie inside the proposed fuelbreak system and could threaten adjacent timber if ignited. The reduction of competition, creation of openings, and preparation of seed beds which will occur as a consequence of this planned action will provide opportunities for pine regeneration.

Six brush control areas are delineated ranging in size from approximately 1 acre to 15 acres (Appendix VII). Brush density varies between the six areas and in part will determine the hazard level and the level of fuels reduction required within each area. Control levels within the six areas will also depend on the expected success of reforestation efforts (Planned Action 8). If soil depth and type in any or all of the control areas proves to be inappropriate for timber production, a high degree of brush removal for the purpose of reforestation will be unnecessary.

Implementation of Planned Actions 5 and 8 should be based on brush control and ponderosa pine planting trials within one-half to one-acre experimental plots on each control area. If seedling establishment occurs in a given area, brush removal and reforestation efforts may continue. If, however, reforestation efforts fail, fuel loading should at least be reduced to safe levels in each of the control areas.

Planting trials should be completed in accordance with the Implementation Schedule, and brush control treatments based on the results of these trials should begin the following year. Mechanical control with chainsaws and stacking and burning of residues is recommended as opposed to prescribed burning, because of the hazards associated with heavy fuel loads in some of the control areas, and the small margin

between control areas and adjacent timber. Prescribed burning will play a major role on Mt. Dome, at a later date, when present fuel levels have been reduced, and when fire safety measures have been implemented.

6. Collect and store ponderosa pine cones from the Mt. Dome timber stand for use in regeneration planting and reforestation. Initiate nursery rearing of seedlings.

Discussion

Use of local seed sources during regeneration or reforestation efforts, especially on "off sites," is usually recommended (Appendix I), but production of seed by ponderosa pine on Mt. Dome is expected to be sporadic. Good seed crops may occur only once every 10 years, and no crops at all will be produced in some years; 1985 was such a year (Hawks, pers. comm.). In order to collect sufficient seed for planting purposes on Mt. Dome, seed crop inspections should occur every year in the late summer or early fall until enough seed has become available to complete all planting efforts proposed in Planned Actions 7 and 8. Approximately five bushels of cones will be required for these efforts. Planting operations as proposed in the implementation schedule (Appendix IX) may have to be delayed if seed has not become available in time to begin planting of one-year-old seedlings in 1988.

A BLM biologist and forester should conduct the seed crop inspections, and only an experienced climber should climb trees on Mt. Dome to collect cones.

7. Interplant containerized, one-year-old ponderosa pine seedlings within the four white fir control areas of Planned Action 4.

Discussion

Planting (as opposed to seeding) has the best chance of success for regenerating ponderosa pine on Mt. Dome (Appendix I). A four-year planting schedule is proposed to correspond with white fir treatments. Each ponderosa pine regeneration area corresponds to a white fir control area (Appendix VI).

Ponderosa pine seedlings should be planted within openings created during white fir control efforts, at a planting rate of 300 to 400 seedlings per acre and a spacing of 10.5 to 12 feet between seedlings. This will ensure proper stocking rates for regeneration of a new age class even if initial survival and establishment of seedlings is very low. Discussions of seedling survival rates and stocking level control are included in the Silvicultural Prescription (Appendix VIII).

8. Interplant containerized, one-year-old ponderosa pine seedlings within the six brush control areas of Planned Action 5.

Discussion

Reforestation opportunities within areas presently dominated by mountain shrub communities will depend on results of brush control

efforts and planting trials as outlined under Planned Action 5. Should planting trials fail on any or all of the experimental plots, implementation of this planned action may be precluded or modified accordingly.

Six Ponderosa Pine Reforestation Areas are delineated, each corresponding to one of the six Brush Control Areas delineated under Planned Action 5 (Appendix VII). Reforestation areas range in size from approximately 1 acre to 15 acres. Planting specification should be the same as those discussed under Planned Action 7.

9. Restrict most activities associated or compatible with HMP implementation to the period between 15 August and 15 October. Adjust entry dates as indicated by annual monitoring of breeding and wintering activity.

Discussion

The Bald Eagle is a resident (year-round) species on Mt. Dome. Breeding activity begins in mid-March and may continue through mid-August. Adults associated with the single breeding territory on Mt. Dome are probably present throughout the year. Arrival of winter migrants begins in approximately late October, and departure of adults the following spring will be complete by late March. Some immatures and subadults may remain through April.

Disturbance of a few eagles during HMP activities will in most cases be unavoidable, even in early fall between the cessation of breeding activity and arrival of migrants. The presence of a late snowpack precludes spring work; thus, fall will be the most appropriate period for HMP activities. Prolonged presence of work crews during fuels reduction efforts, fuelbreak construction, and reforestation, will not disrupt activities during periods of high sensitivity, e.g., during breeding or roosting. The period between 1-30 September may prove to be the most appropriate "window" for fall work, though the last two weeks in August and the first two weeks in October may also be appro priate. Specific adjustments to these dates can be made as indicated by annual monitoring results.

10. During implementation of this management plan, enforce and promote all current BLM policies which emphasize forage and wildlife values and which discourage development of other resources on the Mt. Dome Planning Unit.

Discussion

The primary objective of Planned Action 10 is to discourage public use increases on and near Mt. Dome which would adversely affect Bald Eagles or interfere with implementation of planned actions outlined above. Under the Moderate Use Class Alternative which guides current BLM policies on the planning unit, use of public lands compatible with the objectives of managing Bald Eagle habitat through the foreseeable future are expected to remain unchanged. For this reason, no public-use closures are proposed at this time.

While public use may increase in the long run without regard to BLM policy on nearby private lands, any proposed departure from established management direction on Bureau lands before implementation of planned actions outlined above should be viewed with caution. Public use increases could increase direct human disturbance within nesting and roosting areas, and the risk represented by a single individual's careless use of fire.

A 15-year implementation schedule (Appendix IX) is suggested to complete the extensive fire hazard reduction and reforestation efforts proposed. Planned Action 10 should guide BLM policy on and near Mt. Dome at least through the completion of scheduled actions. Once eagle habitat is secured, modification of policies with regard to public use and other management issues might be appropriate. A post-implementation review and analysis (see Planned Action 11) will be necessary to assess the need and suitability of policy changes.

Guidelines for limiting or permitting public use, for conducting management activities not associated with this HMP, and for development of other resources during the implementation of this management plan, are given below. No specific manpower needs or costs are required, though BLM biologists, foresters, fire management officers, and other lands specialists should monitor all activities and review all public use or development proposals:

A. Oil, gas, geothermal exploration and development.

(1) Permit oil, gas, and geothermal exploration activities in the HMP area only between 15 August and 15 October.

(2) Permit increased traffic on roads below the HMP area from off-site exploration and development only between 15 August and 15 October.

(3) Permit blasting or seismic testing within one mile of the HMP area only between 15 August and 15 October.

B. Lands and minerals actions.

(1) Permit no land exchanges which would reduce or adversely affect the manageable land base in the HMP area.

(2) Allow no road rights-of-way which would improve or encourage access to the HMP area. Maintain roads in their current primitive condition.

(3) Approve no utility rights-of-way applications within established eagle flight corridors (Figure 2) without extensive review and analysis of potential impacts.

(4) Coordinate with claimants on diatomite mining claims in the Mt. Dome area to reduce impacts of prospecting or assessment activities.

(5) Review and make recommendations on mining activities under 5 acres, and on Plans of Operations (POAs) for surface-disturbing activities over 5 acres, to minimize potential impacts.

C. Vegetative manipulations--fire management.

(1) Permit no commercial or domestic fuelwood cutting within the HMP area.

(2) Permit fuelwood cutting within one mile of the HMP area only between 15 August and 15 October.

(3) Limit timber cutting within the HMP area to stocking control and sanitation treatments.

(4) Allow prescribed burning for range and timberland improvements within one mile of the HMP area only between 15 August and 15 October.

(5) Limit use of fire suppression resources in accordance with the proposed operating plan (Planned Action 1). However, suppression resource restrictions should be superseded and full attack capabilities used in the event of a serious wildfire threat in the HMP area.

D. Recreation.

(1) Prohibit all recreational development, including development of primitive hunter camps, within one mile of the HMP area.

(2) Encourage all hunters to avoid the HMP area and discourage shooting of any kind within one mile. BLM biologists should work closely with Department of Fish and Game personnel during the fall to ensure that hunters near Mt. Dome are aware of shooting hazards to Bald Eagles and to work crews which may be present.

(3) Monitor public use within one mile of the HMP area throughout the year and at all opportunities. Coordinate with other public agencies to standardize monitoring objectives and methods.

E. Other guidelines.

(1) Prohibit use of traps and all predator and rodent control techniques and devices which are known to be lethal or hazardous to Bald Eagles within the HMP area, along flight corridors, and in foraging areas found to occur on BLM lands. Monitor control operations if special circumstances require their use.

(2) Prohibit use of biocides which could adversely affect eagles or their prey base, including DDT and related organochlorines, mercury-containing compounds, PCBs, and other toxicants as defined under FWS authority.

11. Conduct a 15-year review of all HMP planned actions and results 1) to assess the effectiveness of management efforts as they relate to Management Objective 4 of this plan, 2) to reassess management needs with regard to public use, and 3) to develop management objectives and guidelines for the post-review period.

Discussion

If during the proposed review process conditions in the HMP area are judged to be compatible with fire safety and ponderosa pine management goals (Management Objectives 1 and 2), implementation of a fire climax management regime and the return of fire to its native role on Mt. Dome (Management Objective 4) are the suggested starting points of management policy and direction in the post-review period. Maintenance of a fire climax will sharply reduce the complexity and labor intensive costs of all subsequent actions, since periodic fuels reduction, white fir control, pine regeneration, and stocking level control, ideally, would be accomplished with limited manpower during and after frequent fires of low intensity.

Specific management needs and objectives for the use of wildfire and prescribed burning in the HMP area should be identified during the review process in a fire-climax management plan. Such a plan, developed for the postreview period, would supersede the suppression operating plan currently proposed (Planned Action 1), and restrictions imposed on prescribed burning (Planned Action 10). Some relevant perspectives for such a plan are discussed later in this plan (see Appendix IX).

Public use restrictions and monitoring results should also be reviewed during completion of Planned Action 11. Public use policies which were inappropriate during implementation of this plan, e.g., because of potential public use increases and associated risks, may be of less concern in the post-review period. For example, restrictions on fuelwood cutting, hunter use, and road rights-of-way, might be eased once site quality has been secured, and given proper mitigation of impacts.

Review of public use restrictions, on the other hand, may result in tighter control of some activities. In the event that public use has increased near Mt. Dome as a result of developments on non-BLM lands, implementation of road closures, which are not recommended at this time, could become necessary. In general, public use policies are not expected to undergo important changes in the post-review period, and public use is not expected to increase significantly.

In accordance with the HMP implementation schedule (Appendix X), the 15-year review proposed in this planned action would occur in the year 2000, after completion of all other actions. Manpower costs cannot be estimated at this time.

VII. EVALUATION AND MONITORING

1. Breeding and Productivity Surveys

The Mt. Dome breeding territory should be checked annually on a minimum of four occasions through the spring and summer: 1) in mid to late March to determine if adults are present and if the nest is occupied), 2) in mid to late April to determine if incubation has begun, 3) in mid to late May to verify adult brooding behavior, and 4) between mid-July and mid-August, when nestlings have reached an advanced stage of development, to verify the number of nestlings which, presumably, will fledge. These dates are approximately one month later than the usual dates of monitoring at most Bald Eagle territories in California; however, late winter conditions at Mt. Dome's high elevation will generally preclude initiation of nesting at earlier dates.

If adults are absent or exhibit weak attachments to the nesting territory in March, or if incubation is not under way by late April, a breeding failure can be assumed. When such failures occur, every attempt should be made to have the nest tree climbed by qualified personnel to recover unhatched or broken eggs, eggshell fragments, and prey items from the nest. Recovery of these materials should also occur every 2 or 3 years when breeding is successful. In such cases, nestlings should be banded by a qualified individual. Nestlings should not be banded before they have reached the age of four weeks, and climbing operations should be completed as swiftly as possible to avoid prolonged disturbance in the nesting territory. Materials recovered from nests should be sent for analysis to the California Department of Fish and Game Laboratory, Rancho Cordova, California.

2. Winter Roost Counts

Monitoring of use by migrants during the fall, winter, and early spring should occur at all opportunities. BLM biologists, seasonal employees, volunteers, and personnel from other agencies should coordinate to conduct the maximum number of roost counts possible each year, using standardized procedures.

3. Monitoring of Foraging Areas

Though most Bald Eagle foraging activities occur on the Lower Klamath and Tule Lake National Wildlife Refuges, some foraging over BLM rangelands near Mt. Dome may also occur. All BLM personnel should record observations of such activity and report them to the Area Wildlife Biologist.

4. Fuelbreak Condition/Fuel Loading

After completion of Planned Action 3, fuelbreaks should be monitored every 3 to 5 years for hazardous accumulation of fuels. Spot maintenance should be conducted to return fuel loading to safe levels

immediately following fuelbreak inspections. A BLM biologist, forester, or fire management officer should conduct this monitoring activity.

After completion of Planned Actions 4 and 5, BLM personnel should monitor the return of fuels within white fir and brush control areas. This activity should be done in conjunction with fuelbreak inspections. Maintenance treatments should immediately follow monitoring activities.

5. Timber Stand Sanitation

A BLM forester should closely examine timber in the HMP area every 3 to 5 years to ensure early detection of insect infestations or disease. Sanitation treatments would follow if necessary with appropriate treatment of residues. The most prevalent diseases of ponderosa pine in this part of the species' range, in decreasing order of importance, are dwarf mistletoe, annosus root disease, elytroderma root disease, meduse needle blight, and limb rusts (Smith 1983). To prevent the transmission of annosus root disease within the HMP area, all stumps 8 inches or larger exposed during stocking control or other operations should be treated with borax (Kliejunas 1986).

6. Seedling Survival/Stocking Level Monitoring

Seedling survival should be monitored the year following all ponderosa pine planting operations. If survival falls below 25 percent, a BLM forester should evaluate the cause or causes and make recommendations with regard to the necessity or suitability of replanting areas where excessive losses occurred. Replanting would be completed during the next scheduled planting operation.

After completion of Planned Actions 4, 7, and 8, stocking levels should be monitored every 3 to 5 years until the 15-year review. Monitoring of stocking levels should be completed by BLM foresters.

7. Public Use Monitoring

Public use should be monitored during roost counts, nest checks, and during implementation of all planned actions. Notes on types of use, location, potential for disturbing eagles, duration, etc., should be submitted to BLM biologists for later review. Public use of any kind within one mile of the HMP area should be recorded. Personnel from other agencies operating in the area should be informed of the need for detailed records of public use near Mt. Dome. Monitoring results will be important to the 15-year review (Planned Action 11), and will allow assessment of public use impacts during implementation of this plan.

VIII. COORDINATION

Coordination With Other BLM Programs

Forestry: Coordination among BLM biologists and foresters will be important in all HMP operations relating to timber stand improvements. Coordination will be necessary during white fir control efforts (Planned Action 4), cone harvesting (Planned Action 6), ponderosa pine planting operations (Planned Actions 7 and 8), and during monitoring stand sanitation, seedling survival, and stocking levels.

Fire Management: Coordination between BLM biologists and fire management personnel will be extremely important at all times to develop and then maintain safe fire conditions. Coordination will be necessary during the development of a suppression operating plan (Planned Action 1), construction of helispots (Planned Action 2), fuelbreak construction (Planned Action 3), and during all fuels reduction efforts (Planned Actions 4 and 5). Coordination will also be important during monitoring activities associated with fuelbreak and fuel loading inspections.

Lands and Minerals: Coordination with lands and minerals specialists will be necessary when mineral explorations or developments are proposed in the Mt. Dome area, during review of Plans of Operation for such developments, when land exchanges or right-of-way applications are under review, and during oil, gas, or geothermal explorations and developments. BLM biologists and mineral specialists should coordinate with claimants on existing diatomite mining claims on the Mt. Dome Planning Unit to prevent disturbance or other adverse effects to breeding and wintering Bald Eagles.

Range Management: BLM biologists and range managers should coordinate if prescribed burns for range improvements are proposed near Mt. Dome. Any prescribed burning for this purpose should be conducted under guidelines included in Planned Action 10.

Wildlife Management: All BLM personnel responsible for implementation of this plan and the Klamath Basin Habitat Management Plan--a plan for reintroducing Peregrine Falcons on Mt. Dome--should be informed of ongoing HMP activities in both cases. Coordination will prevent duplication of effort with regard to habitat improvements and monitoring, and will ensure that activities associated with falcon releases do not result in disturbance to breeding eagles.

Recreation Management: BLM biologists and recreation specialists should coordinate on public use monitoring near the HMP area, and should cooperate to enforce guidelines associated with recreational development under Planned Action 10.

Cultural Resources: Cultural resources in and near the HMP area are not of high quality and are subject to no current or proposed developments. HMP activities will not affect the limited cultural values in the HMP area. BLM archaeologists should inform biologists if new archaeological finds occur near the HMP area.

Coordination With Other Agencies

U.S. Forest Service: Because the HMP area includes USFS-administed lands, BLM-USFS cooperation will be important during virtually all HMP operations. BLM biologists, foresters, and fire management personnel should consult with their USFS counterparts during implementation of planned actions and monitoring activities. Some HMP operations should be performed as BLM-USFS cooperative efforts, with both agencies sharing costs.

U.S. Fish and Wildlife Service: FWS review of this management plan is mandated under Section 7 of the Endangered Species Act before implementation can begin. Coordination with FWS authorities will also be necessary during any activities in which capture and handling of eagles occurs.

The Lower Klamath and Tule Lake National Wildlife Refuges are under FWS jurisdiction. These are the primary foraging areas of Bald Eagles which breed and roost on Mt. Dome; thus, coordination with refuge personnel will be important to many aspects of HMP implementation. For example, the refuges have some fire suppression capabilities and should be included as a potential support agency in the suppression operating plan (Planned Action 1).

National Park Service, Lava Beds National Monument: This agency also has some fire suppression capability and should be included as a potential support agency in the suppression operating plan.

California Department of Forestry: BLM lands on Mt. Dome are under CDF protection (with regard to fire suppression). BLM-CDF cooperation will be critical to all aspects of the fire management program proposed for Mt. Dome. Development of the suppression operating plan should be coordinated through this agency, since plan implementation will primarily be CDF's responsibility.

California Department of Fish and Game: All nest survey and winter roost count data should be made available to DFG's Endangered Species Office. Coordination with DFG personnel in the Game Management and Law Enforcement Divisions will be important, in the first case, to ensure that hunters using the area are aware of shooting risks to Bald Eagles and HMP work crews on Mt. Dome, and in the second case, to ensure that activities by hunters, trappers, animal damage control agents, etc., conform to the objectives of this plan.

California Bald Eagle Working Team: This team, an ad hoc committee for coordinating management and research of Bald Eagles in California, should be kept abreast of all HMP activities and results.

IX. ECONOMICS

Nongame habitat management is difficult to assess from a cost:benefit standpoint because use of the resource or creation of revenue is rarely the intent or the result. Planned actions in this case are labor intensive, most cannot be completed by least-cost methods (e.g., use of CDC Conservation Camp crews), and all must be completed under a restricted schedule. Benefits will "outweigh" costs, however, from the standpoints that completion of work as scheduled will reduce future management needs while meeting current management objectives, and will prevent loss of an irreplaceable resource.

X. PUBLIC AFFAIRS

The public expects and has the right to be informed of endangered species issues and progress in recovery programs, and to understand the reasons for public use restrictions on Federal lands. Yet, public interest can lead to disturbance and other impacts in sensitive wildlife areas. HMP objectives and planned actions deal specifically with this problem; and the problem is basic to a public affairs program for Mt. Dome.

Public affairs actions may be placed in two categories with respect to their role in promoting HMP objectives as well as public interest: 1) those which identify Mt. Dome by name, exact location, or specifically by its significance, and 2) those which are general in nature. It is appropriate, in the former case, to make site-specific and other sensitive information available to persons, government agencies, and private groups which have an obvious and legitimate need for it. These could include, but are not limited to, cooperating Federal and State resource agencies, other agencies (e.g., those involved in lands survey, regulation of energy developments, or law enforcement), local governments, conservation groups, researchers, and volunteers involved in compatible activities. Release of sensitive information to other persons, groups, and to the general public, however, should occur only when a specific demand is made and only after BLM biologists, public information officers, and the applicants have consulted regarding proper use of the information.

Public affairs actions which are general in nature and which promote overall wildlife values on the Mt. Dome Planning Unit will best serve HMP objectives and the long-range goal of securing Bald Eagle habitat. News releases, public presentations (with the possible exception of presentations at scientific meetings), radio and television spots, and other media events should emphasize the importance of the Klamath Basin to wildlife populations throughout the Pacific Northwest and its significance as a Bald Eagle wintering area, without identifying exact locations of sensitive areas. The nature of ongoing efforts there to manage and conserve irreplaceable resources, the need for long-term maintenance of the area's wildlife habitat, the results of annual surveys as they relate to statewide and national perspectives, species status and population trends, and general principles of ecology are topics which will raise the public's awareness and appreciation of the area's values and will increase its understanding of land use constraints. BLM biologists and public information officers should coordinate on all such actions to ensure that news

releases and other presentations are factual but not too specific. BLM representatives should attend the annual Klamath Basin Bald Eagle Conference, Klamath Falls, Oregon, sponsored each February by the National Audubon Society, U.S. Fish and Wildlife, and the Oregon Department of Fish and Wildlife. This conference represents perhaps the most appropriate forum for discussion of Bald Eagle issues and management needs with a select public.

As public awareness of the Klamath Basin's importance to Bald Eagles increases, public demand for access to visual, interpretive, and educational resources may also increase. Access to and control of the public in areas where eagles may be observed could eventually become necessary, and the development of more specific interpretive programs, even the construction of permanent facilities for observation and study of eagles near sensitive areas, such as Mt. Dome, may be appropriate. However, such developments should not occur before current HMP objectives have been met and until related issues have been addressed during the proposed 15-year review of HMP accomplishments.

XI. DEVELOPMENT COSTS SUMMARY

A detailed accounting of HMP implementation costs was conducted during plan development. Manpower costs (including per diem and overtime), equipment maintenance, materials, helicopter time, administrative support, project supervision, and miscellaneous expenses were calculated for each action. Each total was then converted to workmonth equivalents (page 35), on the basis of a $3,000 workmonth for actions involving only BLM staff biologists, fire management officers, etc., and an $1,800 workmonth for actions involving seasonal fire suppression and reforestation crews. Costs of planned actions completed on contract will increase by at least 50 percent due to procurement and overhead needs.

MT. DOME HMP DEVELOPMENT COSTS SUMMARY

YEAR	1986	1987	1988	1989	1990	1991	1992	1993	1994	1995	1996	1997	1998	1999	2000	PROJECT TOTALS
FIRE HAZARD REDUCTION																
Suppression operating plan devel.	1/ 0.5/1.5															0.5/1.5
Helispot const.	1.25/2.3	0.75/1.3														2.0/3.6
Fuelbreak const.		4.0/7.2														4.0/7.2
White fir control			1.75/3.2	2.75/5.0	2.0/3.6	1.5/2.7										8.0/14.5
Brush control								1.25/2.3	1.25/2.3	1.25/2.3	3.75/6.8					7.5/13.7
Residue disposal			1.0/1.8	1.0/1.8	1.0/1.8	1.0/1.8	1.0/1.8	1.0/1.8	1.0/1.8	1.0/1.8	1.0/1.8	1.0/1.8				10.0/18.0
TIMBER STAND IMPROVEMENTS																SUBTOTALS 32.0/58.5
Seed crop inspec.-cone collecting	0.25/0.7	0.25/0.7	0.25/0.7	0.25/0.7	0.25/0.7	0.25/0.7	0.25/0.7	0.25/0.7	0.25/0.7	0.25/0.7						2.5/7.0
Pine regeneration in fir control areas			2.5/4.5	2.0/3.6	1.5/2.7	1.5/2.7										7.5/13.5
Pine planting trials in brush control areas							0.5/1.5									0.5/1.5
Pine reforestation in brush control areas								1.0/1.8	1.0/1.8	1.0/1.8	2.5/4.5					5.5/9.9
EVALUATION AND MONITORING																SUBTOTALS 16.0/31.9
Nesting, roosting, foraging, public use	1.0/3.0	1.0/3.0	1.0/3.0	1.0/3.0	1.0/3.0	1.0/3.0	1.0/3.0	1.0/3.0	1.0/3.0	1.0/3.0	1.0/3.0	1.0/3.0	1.0/3.0	1.0/3.0	1.0/3.0	15.0/45.0
Stand sanitation		0.25/0.7			0.25/0.7					0.25/0.7					0.25/0.7	0.75/2.1
Seedling survival				0.25/0.7	0.25/0.7	0.25/0.7	0.25/0.7	0.25/0.7	0.25/0.7	0.25/0.7	0.25/0.7	0.25/0.7				2.25/6.3
Fuel loading-fuelbreak inspec.					0.25/0.7			0.25/0.7			0.25/0.7				0.25/0.7	1.0/2.8
Stocking levels-stand composition					0.25/0.7			0.25/0.7			0.25/0.7				0.25/0.7	1.0/2.8
15-YEAR REVIEW															? / ?	SUBTOTALS 20.25/59.7
YEARLY TOTALS	3.0/7.5	6.25/12.9	6.5/13.2	7.25/14.8	6.75/14.6	5.5/11.6	3.0/7.7	5.25/11.7	4.75/10.3	5.0/11.0	9.0/18.2	2.25/5.5			? / ?	HMP TOTALS 68.25/150.1

1/ Workmonth equivalent of project cost/project cost (X $1,000).

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XIII. PERSONAL COMMUNICATIONS

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APPENDIX I

EXPANDED DISCUSSION: SILVICS AND MANAGEMENT
OF EASTSIDE PONDEROSA PINE

Range

The timber stand on Mt. Dome, classified according to Eyre's (1980) forest cover types, is a stand of interior ponderosa pine. This type commonly occurs as a fire-climax and is the only type which occurs in northeastern California. There it is often called eastside pine (Robson and Standiford 1983).

The eastside pine type includes a broad range of forest ecosystems which are dominated by ponderosa or Jeffrey pine (Pinus jeffrey) and which occur on slopes east of the southern Cascade-northern Sierra Nevada crest, or within a western boundary running generally northwest from Lake Tahoe to eastern Siskiyou County. Eastside pine occurs in areas with warm, dry summers and long, cold winters and is typically restricted to an elevation range of 4,000 to 6,500 feet (McDonald 1983). The type often occupies shallow soils.

General Ecology

Moisture from snowmelt is a key to eastside pine success, and accounts for the duration and timing of the growing season in the eastside pine type (1 May-15 June). Moisture deficient soil is an important limiting factor at all other times of the year. However, ponderosa pine seedlings can survive prolonged drought once established, even on severe growing sites.

"Off-site" stands of ponderosa pine refers to those which are not capable of the comparable growth volume and numbers of trees of commercial size of normal or near normal sites (Dahl 1970). Trees at such sites often display deformities, snow and frost damage, and other abnormal appearances, and exhibit low growth rates. Overstory trees on Mt. Dome, for example, are smaller, have fewer branches and less well-developed crowns, and have more deformities than at other sites in northern California. Eastside pine is typically an "off-site" type.

The Seed Source Question

Dahl (1970) and Cochran (1970) discussed the need for using local seed sources when seeding or planting ponderosa pine. Silen (1970) concluded that the greatest risk in planting or seeding failures on a severe site lies in the use of a nonlocal seed source.

Artificial vs Natural Regeneration

Natural regeneration in the eastside pine type--as with most ponderosa pine types--is dependent on the chance combination of 1) a good seed crop, 2) availability of a mineral soil seed bed, 3) presence of few seed-eating rodents, 4) loss of competing vegetation, and 5) one or more favorable

growing seasons following seedling establishment (Douglass 1983). The combination of these factors seldom occurs in the eastside pine type. An important barrier is the production of irregular seed crops--heavy seed crops in the eastside pine type occur on the average only once every ten years (Gordon 1983). Because irregular seed crops can be overcome by the collection and storage of cones in years of heavy seed production, and because competing vegetation can be controlled and seed beds prepared by well-known methods, planting ensures the greatest possibility of success in eastside pine reforestation (Douglass 1983).

Site Preparation

The objectives of site preparation for reforestation include control of competing vegetation, reduction of fuel loading, and exposure of mineral soil seed beds. Because of the characteristically dry climate on the eastside, competition control is of primary importance (Lindstrand 1983). McDonald (1983) found that any competition from woody shrubs decreased pine seedling and sapling growth in water deficient areas, and that annual and perennial grasses competed directly with pine seedlings. Grasses may in fact constitute the most serious competition in eastside pine establishment. Six-foot clearances around seedlings were suggested.

Residue Management

Residues are accumulations of dead, mostly woody materials rearranged by man's activities. Climatic factors favor slow decomposition in the eastside pine type and higher conflagration potential. Since eastside pine is a fire-climax (fire-adapted) type, Weatherspoon (1983) concluded that use of fire in residue management and in fuels management will be more cost effective in eastside pine than in most other ponderosa pine types.

Management Implications for Mt. Dome

Commercial timber on Mt. Dome is composed of ponderosa pine, a species which is well adapted to the moisture deficient soils characteristic of the region, and which is highly fire resistant. Ponderosa pine forests in the region tend to occur as fire-climaxes. Given the long-range objective of managing a fire-climax in the HMP area, use of seed acquired on Mt. Dome is recommended for regeneration efforts there.

Planting (as opposed to natural regeneration) will best ensure that ponderosa pine continues to be represented in the HMP area at this time. Though weather cannot be controlled, and control of animal damage is uncertain, irregular seed crops can be overcome by collection and storage of seed in years of heavy seed production.

Site preparation and control of competing vegetation during planting operations on Mt. Dome will be extremely important to seedling establishment. Removal of brush and white fir during fuels reduction efforts will reduce competition; since soils will be disturbed during these operations, and seed beds exposed, white fir control and regeneration planting are proposed as joint operations.

APPENDIX II

EXPANDED DISCUSSION:
THE ROLE OF FIRE IN PONDEROSA PINE ECOSYSTEMS

Appendix II is included to support and justify Management Objective 4. The long-range objective of returning fire to its native role on Mt. Dome is shown to be consistent with current fire management theory with regard to fire-dependent ecosystems. This discussion is based on the following state-of-the-art reviews: Wright (1978), Davis et al. (1979), U.S. Forest Service (1980), and Bacon and Dell (1985).

The Natural Role of Fire

Nearly all terrestrial ecosystems in North America have been shaped by and have adapted to fire. A natural fire regime for a particular land area is a function of the frequency of fire occurrence, the fire intensity, and how much of what fuels are consumed. Where fire occurs frequently, fuels will be reduced and subsequent fire intensity may be lowered. When periods between fires are long, fires may be of much greater intensity.

The four major natural fire regimes are:

Type One - frequent fires of low to moderate intensity;
Type Two - infrequent fires of high intensity;
Type Three - frequent fires of high intensity;
Type Four - infrequent fires of low to moderate intensity.

The Type One regime occurs in climatic conditions which provide a frequent ignition source combined with recurring periods of weather which encourage the spread of fire. In the absence of fire these ecosystems can be expected to be adversely influenced (Loucks 1970), regardless of whether they are seral or climax. Type one regimes are also referred to as short-fire-interval ecosystems (e.g., Van Wagtendonk 1983).

The Ponderosa Pine Ecosystem--a Type One Regime

Fire has always been an important ecological force in ponderosa pine communities. Repeated fires checked encroachment of more shade tolerant, less fire resistant species associates (e.g., white fir and incense-cedar), reduced fuels, created openings for pine regeneration, and thinned stands. Ponderosa pine is a fire climax species over much of its natural range giving way to more tolerant (but less fire resistant) species when fire is excluded. Fire climax stands are characterized by open-grown, uneven-aged conditions- all size classes are represented (though often in even-aged groups).

Ponderosa pine has many fire resistant characteristics: 1) seedlings are able to withstand high temperatures, whether from light fires or from thermal stress associated with hot, dry exposures (seedling establishment, in fact, is favored when fire removes the litter and exposes mineral soil), 2) the bark is thick and relatively unburnable (saplings only 6 to 8 feet

in height regularly survive burns of low intensity), 3) the species self prunes (drops lower branches) preventing propagation of fire into the crown, 4) foliage is open and loosely arranged, and 5) foliage has a high moisture content.

In the absence of frequent fire, fuels accumulate in thickets of tolerant species, in overstocked pines, stands of brush, grasses, dead and down materials, litter, and duff. Fire-resistant characteristics are overcome by abundant fuels when the infrequent fire occurs, and the fire climax is lost; or succession leads to replacement of pine in the overstory by fir, cedar, or other tolerant species. This is a simplification of what "typically" would occur in the absence of frequent fire, however, it does represent a composite of the events which may occur to adversely affect the climax character maintained by frequent fire.

Frequency of Fire

Wright (1978) reviewed the history of fire in ponderosa pine communities throughout the West. For seral communities, periods between fires under natural conditions ranged from 5 to 12 years in New Mexico and Arizona (there was no difference for climax communities), 8 to 10 years in California, 8 to 10 years in Oregon, and 7 to 19 years in Idaho and Montana. In climax communities fire frequency ranged from 6 to 11 years in Idaho and Montana and from 15 to 20 years in South Dakota. Frequency of fires within these ranges has resulted in low to moderate fire intensities when they do occur, smaller acreages burned, reductions in damage, and increased ability to survive severe wildfires when they occasionally occur.

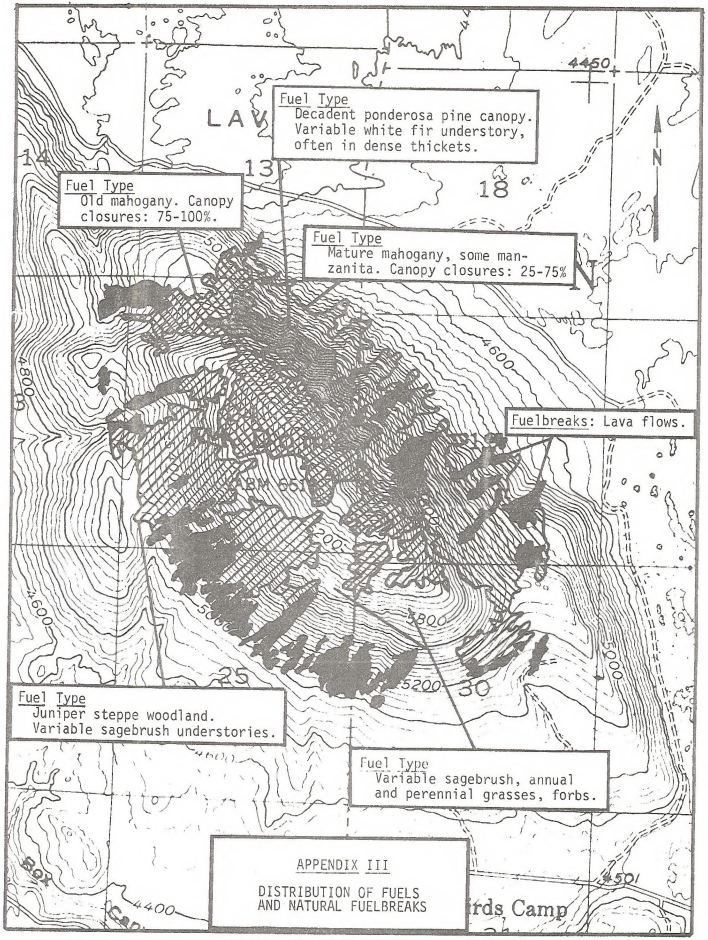
Natural Succession with Fires

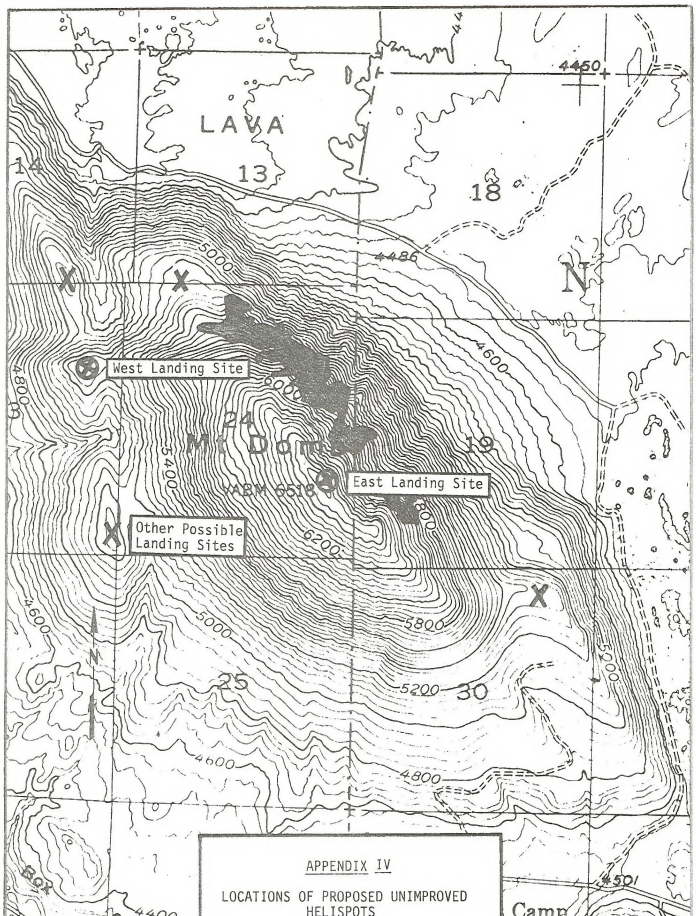
Natural succession with fire in ponderosa pine communities "typically" begins with the following events: windfall, insects, mortality, and (when fuels have accumulated enough for propagation) fire. Because of these events openings are created naturally. Seed is then blown onto bare mineral soil from nearby trees or old seed trees which survived the fire. Later, seedlings are thinned by competition with brush and grasses, and still later (generally, after a minimum of 8 years), by fire. As passing surface fires kill younger, weaker trees and eliminate dense thickets, competition and stand stagnation will be minimized. Lower branches and foliage of the remaining trees are naturally pruned. As trees mature canopies expand, reducing sunlight and herbaceous growth, and increasing thickness of pine litter on the forest floor. Tall, mature trees will then become vulnerable to lightning, may be struck repeatedly, and will act as conductors igniting surface fires and eliminating dead and diseased trees and fuel accumulations. Each fire creates openings for the cycle to begin again.

Management Implications

An integrated program of fire management, not simply fire prevention and suppression, and silvicultural treatment, is emerging as the more "natural" yet most effective approach for the maintenance of ponderosa pine ecosystems. It will take time to control fuels which have accumulated during

nearly a century of total suppression policy, before many forests can be easily and safely managed through modified suppression approaches and prescribed fire. But once that stage is achieved, fire hazards and suppression costs will be reduced, investments for silvicultural treatments will decline, yet forests will be more vigorous and productive.


Fuel Type
Decadent ponderosa pine canopy. Variable white fir understory, often in dense thickets.
Fuel Type
Old mahogany. Canopy closures: 75-100%.
Fuel Type
Mature mahogany, some manzanita. Canopy closures: 25-75%
Fuelbreaks: Lava flows.
Fuel Type
Juniper steppe woodland. Variable sagebrush understories.
Fuel Type
Variable sagebrush, annual and perennial grasses, forbs.
APPENDIX III
DISTRIBUTION OF FUELS AND NATURAL FUELBREAKS
4450
4600
4800
5000
5200
5400
5600
5800
BM 5511
LAV
13
14
18
25
30
N



APPENDIX IV

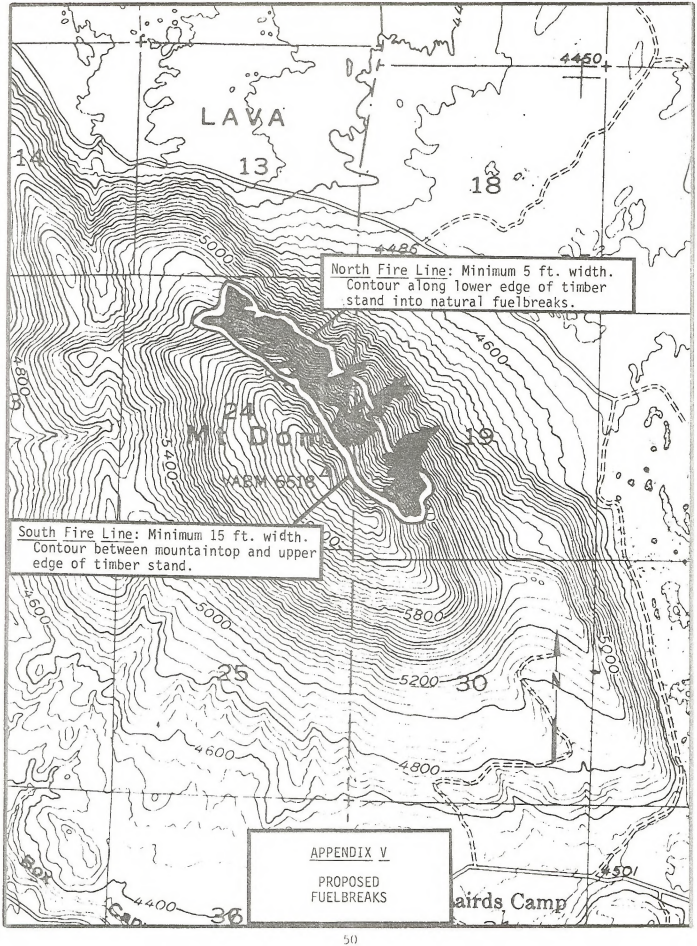
LOCATIONS OF PROPOSED UNIMPROVED HELISPOTS

Helispot Specifications

East Landing Site. The proposed landing site on Mt. Dome's summit (NE¼ of the SE¼, Section 24, T. 46 N., R. 2 E.) will require extensive site modifications and will be crucial to initial attack operations in the event of wildfire in the HMP area. Work crews will contend with dense brush, rock and boulder fields, and difficult terrain. Leveling and surface preparation of the landing site will almost certainly require fill material, such as gravel, which will need to be trucked to the Mt. Dome area and then air dropped by helicopter at the landing site. Gravel should be leveled over an area 15 feet in diameter.

West Landing Site. A small knoll on Mt. Dome's western flank (SE¼ of the NE¼, Section 23, T. 46 N., R. 2 E.) will be suitable as a landing site with minor modifications. Only light brush removal and surface improvements will be necessary.

All vegetation at both landing sites must be cleared to ground level over a 75-foot radius to provide safe ingress-egress by the largest craft likely to be used during fire suppression operations. Landing sites must be leveled if necessary, cleared of rocks and debris, and should undergo other surface improvements as needed. All surface improvements will require the use of chainsaws and simple hand tools only. Residues from these operations should be stacked for burning in clearings or in other suitable areas. Burning of residue piles should be completed the following year under direct supervision of BLM fire management personnel.

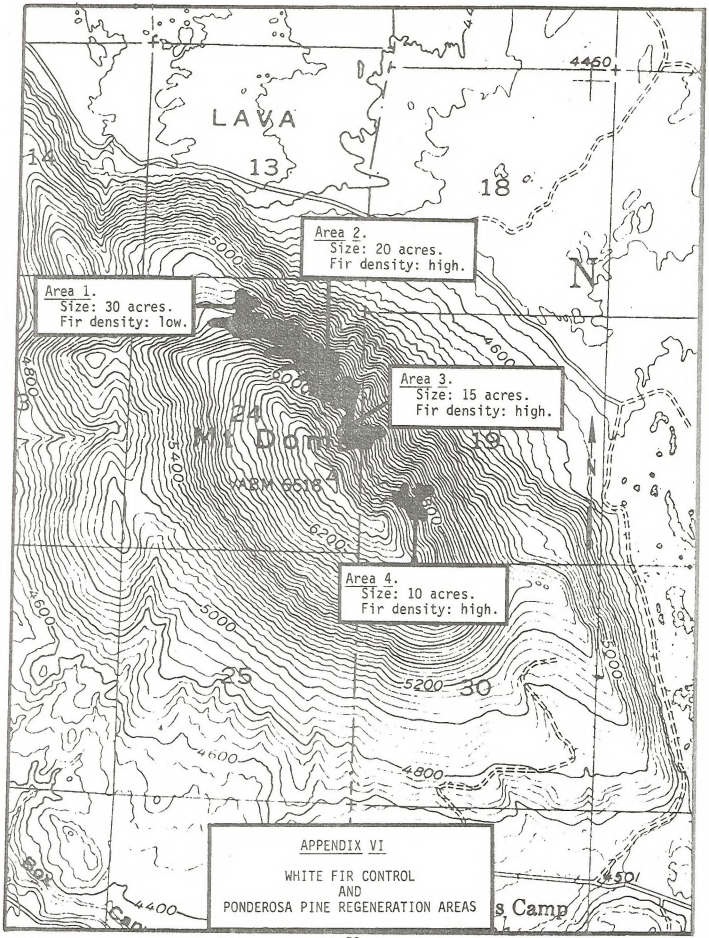

LAVA
13
14
18
4460
5000
4486
North Fire Line: Minimum 5 ft. width.
Contour along lower edge of timber
stand into natural fuelbreaks.
4600
4800
24
Mt Dom
19
BM 6618
5400
South Fire Line: Minimum 15 ft. width.
Contour between mountaintop and upper
edge of timber stand.
5800
5000
25
5200
30
4600
4800
APPENDIX V
PROPOSED
FUELBREAKS
4400
36
airds Camp

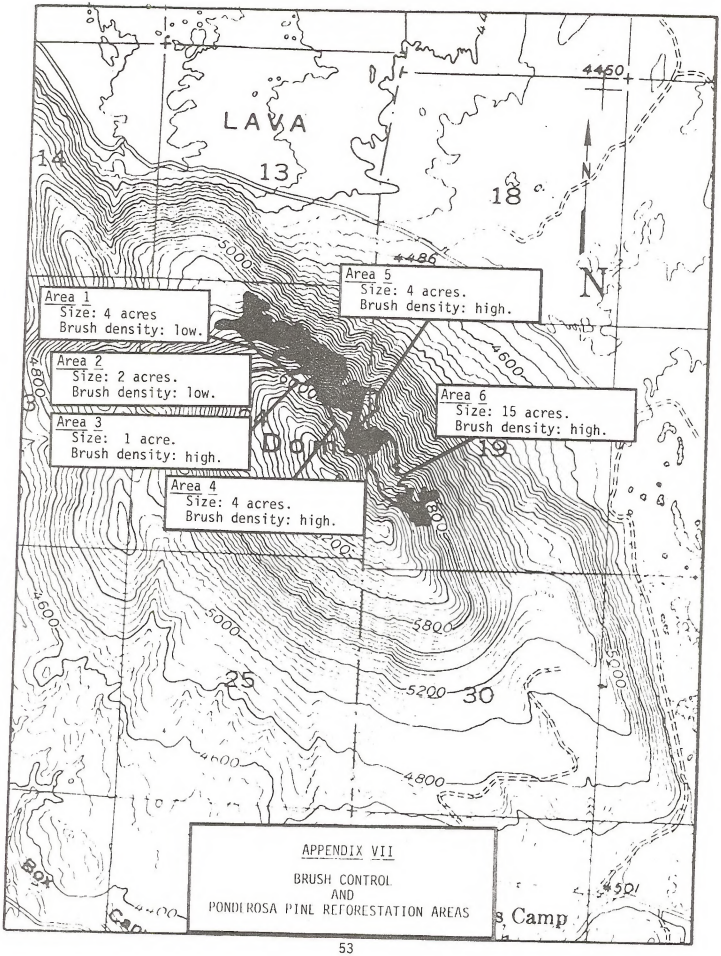
Fuelbreak Specifications and Discussion

Firelines above the roost area should contour the mountain top and should be a minimum of 15 feet in width; widths of 20 to 25 feet will be preferable where brush density is extremely high. Because rock and boulder fields cover much of Mt. Dome's summit, construction of wide fuelbreaks will be somewhat simplified. Removal of most standing brush in these rocky areas will result in effective barriers.

Less brush and lighter overall fuel loads characterize the areas below the roost, however, these areas are less rocky and contain greater amounts of grasses, litter, and other fine fuels. Though firelines below the roost may be limited to widths of 5 to 10 feet, complete brush removal and removal of most fine fuels will be necessary in some areas. Contouring of these firelines into the scattered lava beds present on the northeast slope will create natural barriers and reduce construction costs.

Residue disposal during fuelbreak construction will depend on the amount of fuel loading along firelines. Lighter brush removal below the roost will result in less residue, some of which could simply be scattered outside the fireline. Where brush density is greater (e.g., on firelines above the roost), stacking and burning of residues will be necessary. In such cases residues should be stacked on the firelines. Burning of residue piles should be completed in the next fall following fuelbreak construction, under direct supervision of BLM fire management personnel.


LAVA
13
18
14
4460
5000
4600
Area 1.
Size: 30 acres.
Fir density: low.
Area 2.
Size: 20 acres.
Fir density: high.
Area 3.
Size: 15 acres.
Fir density: high.
Area 4.
Size: 10 acres.
Fir density: high.
N
24
19
5400
6200
5200
30
25
4800
4400
APPENDIX VI
WHITE FIR CONTROL
AND
PONDEROSA PINE REGENERATION AREAS


LAVA
13
14
18
N
4450
4486
5000
4600
5800
5200
30
25
4800
Area 1
Size: 4 acres
Brush density: low.
Area 2
Size: 2 acres.
Brush density: low.
Area 3
Size: 1 acre.
Brush density: high.
Area 4
Size: 4 acres.
Brush density: high.
Area 5
Size: 4 acres.
Brush density: high.
Area 6
Size: 15 acres.
Brush density: high.
APPENDIX VII
BRUSH CONTROL
AND
PONDEROSA PINE REFORESTATION AREAS
Box
Camp

APPENDIX VIII

SILVICULTURAL PRESCRIPTION FOR MT. DOME

The objectives of silvicultural entries are 1) improve existing stand structure by establishing stocking control of ponderosa pine and its competitors, 2) regenerate a new age class by interplanting pine in natural and created openings, 3) increase the area occupied by timber on Mt. Dome through bush conversion and reforestation, and 4) restore fire to the ecosystem. Assumptions, specifications, and discussion follow (discussion for Objective 4 is presented in Appendix IX).

Assumptions

1. Timber in the HMP area is not included within BLM's allowable cut base (U.S. Bureau of Land Management 1981), thus, timber management and habitat management goals will in no way conflict.

2. Timber management in the HMP area will be conducted specifically and with the primary goal of maintaining site quality for Bald Eagle nesting and roosting.

3. Available soil moisture will be the most critical limiting factor, thus, stocking levels in all size classes will be far below plantation levels on high index sites.

4. Assumed minimum stocking of combined small and large sawtimber will be 25 stems per acre.[1]

5. Assuming that the overstory will be comprised of large sawtimber at a stocking rate of about 15 stems per acre, overstory closure is expected to be below 20 percent; thus, about 80 percent of the prescription area will be available at any given time for interplanting ponderosa pine and/or maintenance of intermediate size classes.

6. The assumed site index is 50 on a 100-year base (a 50-foot height increase is expected in the first 100 years); the assumed diameter growth at breast height is 1 inch per 10 years.[2]

7. Uneven-aged (selective) methods will be used to maintain a stress-free, multistoried timber stand, with scattered arrangements of timber in all size classes, though often in group-wise arrangements of even-aged trees.

---

[1]Keister (1981) estimated stocking densities of trees with breast-height diameters greater than 12 inches on Mt. Dome at 26 stems per acre.

[2]Assumed growth rates are based on the mean age, height, and diameter at breast height of roost trees measured by Keister (1981): 250 years, 89 feet (range 51-110 feet), and 25 inches (range 20-32 inches), respectively.

Stand Specifications

Stand specifications given below include recommended stocking densities, crown closures, and species compositions in five size classes. The primary targets for stand improvements are to establish and maintain overstory stocking (density of large sawtimber) between 10-15 stems per acre, overstory crown closure between 15-20 percent, and stand closure (all size classes) under 60 percent.

Prescription specifications were developed to guide initial site entries and may be modified as future treatment needs are recognized. Adjustment of stocking rates, for example, may become necessary or desirable as knowledge of actual site productivity increases.

Discussion

Objective 1: Improve existing stand structure by establishing stocking control of ponderosa pine and its competitors.

Stocking control will begin with the reduction of white fir density below the canopy (Planned Action 4). This will relieve stress on pines targeted for recruitment into larger size classes and will create openings for planting of pine. This will be a critical phase during timber stand improvements. Pine is understocked in saplings and poles because of fir density and the partial loss of the component to wildfires in the 1940's. Because pine is understocked, white fir initially may have to be retained at higher compositions than target levels in order to maintain replacement through the pine regeneration period.

Objective 2: Regenerate a new age class within the present stand by interplanting ponderosa pine in natural and created openings.

The stocking rate for regeneration planting will be 300-400 seedlings per acre, at a spacing between seedlings of 10.5 to 12 feet. Given a short growing season and low available soil moisture, seedling survival in the first few years is not expected to be above 50 percent, and may be much lower. However, stocking levels of 75-100 saplings per acre, after seedling losses have occurred, should be sufficient to ensure eventual recruitment into all size classes at recommended stocking levels--and, to ensure recruitment of 10 to 15 trees into the overstory at maturity. In addition, soil moisture competition between seedlings will be reduced with heavy initial losses (75 percent).

Subsequent thinning of trees in planting areas may be required as trees increase in size and moisture requirements increase. As in any silvicultural rotation, stocking control of saplings, and subsequently of poles, of small sawtimber, and finally, of large sawtimber, will be necessary. Aggressive treatment of ponderosa pine competitors will be crucial, as well. Regeneration of new age classes through the rotation will also be necessary to assure continued, long-term overstory recruitment. In most silvicultural prescriptions, an extended rotation table is included in which silvicultural entries at set intervals are prescribed for these purposes. Such a table has been deferred here precisely because, under the ideal of fire climax-management, these purposes would be achieved

Stand Specifications for Timber in the
Mt. Dome Bald Eagle Roost

SIZE CLASS	DBH [1] (Inches)	STOCKING DENSITY (Stems/Acre)	CROWN CLOSURE (%)	SPECIES COMPOSITION (% Ponderosa Pine)
Seedlings	----	300-400	----	100
Saplings	5	75-100	5-10	$\geq$70
Poles	5-10	35-50	10-15	$\geq$70
Small Sawtimber	11-20	15-30	10-15	$\geq$70
Large Sawtimber	21+	10-15	15-20	$\geq$80
		25-35 (Small-Medium Sawtimber)	40-60 (All Size Classes)	

[1] For convenience, the division between small and large sawtimber has been set at 20 inches. This places all trees likely to be used as roost or nest trees (those above 20 inches in diameter) in one size class.

through the use of fire. Additional discussions of fire-climax management, as it relates to the achievement of silvicultural goals, is included in Appendix IX.

Objective 3: Increase the area occupied by timber on Mt. Dome through brush conversion and reforestation.

Assuming that ponderosa pine planting trials within brush control areas are successful, brush conversion (Planned Action 5), and reforestation (Planned Action 8), and subsequent silvicultural treatments should proceed in accordance with guidelines discussed above. If reforestation efforts are highly successful, similar efforts may be appropriate in other areas on Mt. Dome currently dominated by brush. Such efforts should be considered during the 15-year review.

APPENDIX IX

EXPANDED DISCUSSION: SOME PERSPECTIVES FOR
FIRE-CLIMAX MANAGEMENT ON MT. DOME

Once fuels have been reduced to acceptable levels and fire safety has been established, after regeneration of ponderosa pine has been assured, and a post-implementation review has been completed, an integrated program of fire and silvicultural management, with the return of fire as an applied ecosystem process, should be emphasized on Mt. Dome. Under the ideal of fire-climax management, virtually all management objectives--periodic fuels reduction, white fir control, pine regeneration, and stocking level control--would be accomplished in a short-fire-interval system of natural and prescribed burns.

Specific objectives for maintaining a fire-climax on Mt. Dome, and the extent to which the above ideal can be achieved, cannot be predicted at this time (by this writer, at least). Indeed, applied fire management is a rapidly developing field, and the state of the art is ever changing. Guidelines for the use of fire on Mt. Dome should be considered throughout the implementation period for this plan and, defined in a fire-climax management plan, proposed for development during the 15-year review. In order to develop an integrated plan, it will be necessary for resource management professionals within wildlife, timber, and fire management disciplines to work together, to stay abreast of developments in the field, to determine and meet information needs, and ultimately, to be prepared to model fire frequency and behavior on Mt. Dome over an extended period. These are not activities which are specifically outlined and scheduled as planned actions, but they are essential to the overall effort; a certain "professional initiative" will be required.

It is possible at this time to outline some information needs and to direct attention to ongoing research in California which is highly relevant to the proposed long-term management effort on Mt. Dome. Some of these information needs and research efforts are considered below:

Fire Ecology on Mt. Dome:

Information needs for natural fire management planning have been identified by Parsons et al. (1983). An understanding of the ecosystem of a fire management area is essential, including the history and natural role of fire, the effects of past fire suppression, and fire behavior under various conditions. Understanding these aspects of fire history and behavior on Mt. Dome will require some degree of on-the-ground study by fire and timber management professionals.

Fire Frequency:

Periods between fires in ponderosa pine ecosystems were reviewed by Wright (1978) (See Appendix II). In California fires occurred, historically, between 4 and 8 years on the average. In a more recent study, in New Mexico, mean fire intervals were also found to be 4 to

8 years (Swetnam and Dieterich 1983). Wright (1978) recommended fire intervals of 5 to 7 years for most ponderosa pine ecosystems. On Mt. Dome, fuel accumulation may occur at a slower rate, given the site's relatively low productivity. Thus, the specific fire interval outlined in a fire-climax plan for this ecosystem should be based on approximations of its natural fire interval. At present, no such approximations are available for Mt. Dome.

Burning Conditions:

To simulate fire in its natural role on Mt. Dome, the conditions under which fire can successfully be propagated must be understood. This will require the ability to quantify fuel accumulation and decomposition rates, vegetation effects, and fuel reduction levels, based on varying conditions and fire intervals.

Size of Burns:

Information pertaining to the natural "patchiness" of ponderosa pine ecosystems is needed to address the questions of burn size and configuration. What were the configurations of fire-related, group-wise arrangements of even-aged trees in pre-1900 ponderosa pine ecosystems in California? How much acreage was burned at each burn interval? How does this relate to Mt. Dome?

Ignition Source:

This is the question of integrating prescribed burns and wildfires (planned vs. unplanned ignitions) in the fire-climax management regime. It is fundamental to the definitions of "natural fire management" (Bancroft et al. 1983); it is fundamental to the selection of a fire management program for Mt. Dome. Clearly, if a management system for Mt. Dome is to be in its most efficient and cost-effective state, unplanned ignitions (e.g., those resulting from lightning strikes) must be allowed to run their course, if conditions at the time meet those prescribed for planned ignitions. How can natural and prescribed burns best be integrated?

Modeling of Fire Behavior and Fire Effects:

Relating fire frequency and intensity directly to long-term ecological changes is a basic step to understanding in depth the role of fire on Mt. Dome both as it was in the past, and as it should be in the future. This has been attempted for both ponderosa pine and giant sequoia-mixed conifer (including ponderosa pine) ecosystems in California, by van Wagtendonk (1972), Bonnicksen and Stone (1982), and van Wagtendonk (1983). This important ongoing work will play a major role in the evolution of natural fire management systems in ponderosa pine ecosystems throughout the west; and should play an equally important role in the eventual development of a fire-climax management regime on Mt. Dome.

APPENDIX X

MT. DOME HMP IMPLEMENTATION SCHEDULE

	1986	1987	1988	1989	1990	1991	1992	1993	1994	1995	1996	1997	1998	1999	2000
Develop fire suppression operating plan.	1/ X														
Construct East Helispot.	X														
Construct West Helispot.		X													
Construct fuelbreaks.		X													
Treat White Fir Control Area No. 1.			X												
Treat White Fir Control Area No. 2.				X											
Treat White Fir Control Area No. 3.					X										
Treat White Fir Control Area No. 4.						X									
Treat Brush Control Areas Nos. 1, 2, 3.								X							
Treat Brush Control Area No. 4.									X						
Treat Brush Control Area No. 5.										X					
Treat Brush Control Area No. 6.											X				
Burn residue piles.			X	X	X	X	X	X	X	X	X	X			
Inspect seed crops—collect cones.	X	X	X	X	X	X	X	X	X	X					

1/ Unless otherwise indicated, planned actions will be completed each year between 15 August and 15 October. Development of a fire suppression operating plan, however, should be completed before the beginning of the 1986 fire season.

APPENDIX X (Continued)

MT. DOME HMP IMPLEMENTATION SCHEDULE

	1986	1987	1988	1989	1990	1991	1992	1993	1994	1995	1996	1997	1998	1999	2000
Plant Ponderosa Pine Regeneration Area No. 1.			X												
Plant Ponderosa Pine Regeneration Area No. 2.				X											
Plant Ponderosa Pine Regeneration Area No. 3.					X										
Plant Ponderosa Pine Regeneration Area No. 4.						X									
Conduct pine planting trials in brush control areas.							X								
Plant Ponderosa Pine Reforestation Areas Nos. 1, 2, 3.								X							
Plant Ponderosa Pine Reforestation Area No. 4.									X						
Plant Ponderosa Pine Reforestation Area No. 5.										X					
Plant Ponderosa Pine Reforestation Area No. 6.											X				
Monitoring of nesting, roosting, foraging and public use.	X 1/	X	X	X	X	X	X	X	X	X	X	X	X	X	X
Monitoring of stand sanitation.		X			X					X					X
Monitoring of seedling survival.				X	X	X	X	X	X	X	X	X			
Monitoring of fuel loading and fuelbreaks.					X			X			X				X
Monitoring of stocking levels & stand composition.					X			X			X				X
Conduct 15-year HMP review.															X

1/ Monitoring of nesting, roosting, foraging activity, and public use will occur year-round.

APPENDIX XI

LIST OF PERSONS/AGENCIES TO RECEIVE FINAL HMP DRAFT

Dave Harlow
Sacramento Endangered Species Office
U.S. Fish and Wildlife Service
2800 Cottage Way
Sacramento, CA 95825

Ron Jurek
Endangered Species Office
California Department of Fish & Game
1416 Ninth Street
Sacramento, CA 95814

Nancy Green
Region 5 Office
U.S. Forest Service
630 Sansome Street
San Francisco, CA 94111

Richard R. Olendorff
Endangered Species Coordinator
U.S. Bureau of Land Management
2800 Cottage Way
Sacramento, CA 95825

Supervisor
Modoc National Forest
441 N. Main Street
Alturas, CA 96101

Regional Chief
Region II Headquarters
California Department of Forestry
6105 Airport Road
Redding, CA 96002

Ranger in Charge
Siskiyou Ranger District
California Department of Forestry
P.O. Box 128
Yreka, CA 96097

Region I Manager
California Dept. of Fish & Game
601 Locust Street
Redding, CA 96001
Attn. Also: Manager, Shasta Wildlife Unit

Susanville District Manager
U.S. Bureau of Land Management
P.O. Box 1090
Susanville, CA 96130
Attn. Also: District Biologist

Alturas Resource Area Manager
U.S. Bureau of Land Management
P.O. Box 771
Alturas, CA 96101
Attn. Also: Resource Area Biologist

Doublehead District Ranger
U.S. Forest Service
P.O. Box 818
Tulelake, CA 96134
Attn. Also: District Biologist

Refuge Manager
Klamath Basin National Wildlife Refuge
Rt. 1, Box 74
Tulelake, CA 96134

Park Superintendent
Lava Beds National Monument
P.O. Box 865
Tulelake, CA 96134

Steve Spangle
U.S. Forest Service
Mendocino National Forest
P.O. Box 96
Upper Lake, CA 95485

Phil Detrich
Ecos, Inc.
1600 Sacramento Inn Way, Suite 236
Sacramento, CA 95815

Mark Jenkins
California Bald Eagle Working Team
Pacific Gas & Electric Co.
3400 Crow Canyon Road
San Ramon, CA 94583

Karen Steenhof
Pacific States Bald Eagle Recovery Team
U.S. Bureau of Land Management
3948 Development Ave.
Boise, ID 83705

Biosystems Analysis, Inc.
303 Potrero St., Suite 29-203
Santa Cruz, CA 95060

George Keister
Oregon Department of Fish and Wildlife
P.O. Box 8
Hines, OR 97738

Ralph Opp
Oregon Department of Fish and Wildlife
4343 Miller Island Road
Klamath Falls, OR 97601

Robert Anthony
Department of Fisheries and Wildlife
Oregon State University
Corvallis, OR 97331

David Garcelon
Catalina Conservancy
P.O. Box 2739
Avalon, CA 90704

APPENDIX XII

COMMENT LETTERS

Memorandum

Susanville, California

IN REPLY REFER TO:
8840 (C-020)

To : State Director, (932.51)

Date: JUL 16 1985

FROM : District Mananger, Susanville

SUBJECT: Section 7 Consultation on Two HMP's

Attached for your review and forwarding to the Fish and Wildlife Service for section 7 consultation are two HMP's; one for nesting bald eagles and one for the reintroduction of peregrine falcons.

ROBERT J. SHERVE

ACTING

HAWKS:CB7/12/85:x231

Dept. of Interior
RECEIVED
NOV 25 1985
BUREAU OF LAND
MANAGEMENT
ALTURAS, CALIFORNIA

DSC-1541-2
Mar. 1974

January 8, 1986

BioSystems Analysis, Inc.
303 Potrero Street, Suite 29-203
Santa Cruz, CA 95060

Richard S. Drehobl, Area Manager
United States Department of the Interior
Bureau of Land Management
Alturus Resource Area
P.O. Box 771
Alturus, CA 96101

Dear Mr. Drehobl:

Thanks for the opportunity to review the Mt. Dome Habitat Management Plan you sent last week. Needless to say, Lehman has done an excellent job in its preparation. I have no substantive comments other than praise.

One small error on page 8 (middle of page): Actually three of seven subadults which moved from the Pit River in northeastern. . . .

Again, I am really impressed with the quality and thoroughness of the work.

Sincerely,

Grainger Hunt, Ph.D.
Senior Ecologist

P.S. If convenient, sometime I would like a copy of the Bald Eagle Management Plan on the Baum Lake territory.

GH:wc

United States Department of the Interior

FISH AND WILDLIFE SERVICE

KLAMATH BASIN NATIONAL WILDLIFE REFUGES
Route 1, Box 74
Tulelake, CA 96134

January 16, 1986

Wildlife Biologist
Bureau of Land Management
P.O. Box 771
Alturas, CA 96101

Dear Paul:

I have looked over the Mt. Dome Habitat Management Plan for the protection of the bald eagle roost and nest territory. It appears to be a well thought out plan and when implemented will dovetail nicely with other eagle management in the Klamath Basin. We have been monitoring that area for winter bald eagle activity for some years and feel that it is one of the key areas for bald eagles in the basin. I am very pleased to see that steps are in motion for protection and perpetuation of Mt. Dome in behalf of bald eagles.

Incidentally, we at Klamath Basin Refuges are looking forward to the peregrine falcon reintroduction project you are planning for Mt. Dome. If there is any way we could be of assistance on this project, don't hesitate to call.

Sincerely,

James L. Hainline

James L. Hainline
Wildlife Biologist

JLHainline:dpm

RECEIVED
JAN 21 1986
BUREAU OF LAND MANAGEMENT
ALTURAS, CALIFORNIA

STATE OF CALIFORNIA—THE RESOURCES AGENCY

GEORGE DEUKMEJIAN, *Governor*

DEPARTMENT OF FISH AND GAME
601 LOCUST STREET
REDDING, CA 96001
(916) 225-2300

January 21, 1986

Mr. Richard J. Drehobl, Area Manager
Bureau of Land Management
P. O. Box 771
Alturas, CA 96101

Dear Richard:

We have reviewed the Mt. Dome Bald Eagle Habitat Management Plan. We concur with the management objectives and the methods of achieving the objectives. We do have some comments as follows:

The plan includes a section on fisheries and wildlife that should be broadened. No mention is made, for example, of Rocky Mountain mule deer except as a source of eagle food. Some discussion should be included regarding the impacts that deer may have on conifer reestablishment and the program's effect on deer. Although these impacts may not be major, they nevertheless should be discussed. For example, deer forage and cover will be lost and depredation of conifer seedlings could occur. Deer are emphasized in our comments, but other wildlife will also be affected to some degree. In order for the plan to be complete some discussion of the program's effect on the other wildlife should be included.

Thank you for the opportunity to review and comment on this project proposal.

RECEIVED
Alturas R.A.
JAN 24 1986
ROUTE INITIAL

AREA MANAGER
RANGE STAFF
RANGE CON
RANGE TECH
ENGINEERING
GEOLOGIST
NAT RES SPEC
FORESTER
WILDLIFE BIOL
REALTY SPEC
FIRE STAFF
DRY CREEK
OTHER

Sincerely,

A. E. Naylor
Regional Manager
Region 1

VICTOR ATIYEH
GOVERNOR

Department of Fish and Wildlife
REGION 5—SOUTHEAST OREGON
BOX 8, HINES, OREGON 97738 PHONE 573-6582

January 22, 1986

Robert N. Lehman
Wildlife Biologist
Bureau of Land Management
Alturas Resource Area
PO Box 771
Alturas CA 96101

Dear Robert:

Thanks for sending me the Mt. Dome Habitat Management Plan for review. I found it interesting, well written and comprehensive. Although I don't know much about managing forest stands, the strategy here seems to be a good one. I have included several comments, some of which you may already be aware of.

If you have any questions about my comments please, let me know. Thanks again for including me in your review process.

Sincerely,

George Keister

George Keister,
Wildlife Biologist

GKi

x/files

Page	Paragraph	Sentence	Comments
iii	1	2	There are 5 roosts documented in my thesis. In addition I know of at least 2 others; plus there may be a couple more. There is one near Butte Valley; one near upper Klamath Lake (however these 2 are not a part of the Roost-Feeding ground complex around the lower part of the Klamath basin); and may be a couple more around Bryant mtn & Stuckel mtn.
7	3	1	make clear "137" of which eagles.
10	2	last half	Counts seem to be on the low side the last few years. It's hard to attribute reasons for that without knowing the situation in the basin and at the rest of the roosts. Also, I found the day results (# of eagles counted) were quite variable at Mt. Dome depending on the counter. Some people like to count from inside their vehicles which would significantly decrease the count at Mt. Dome, in my opinion. Also different weather conditions can affect the count. For example, when the wind was high and/or under full moon conditions, eagles would soar above Mt Dome and end up flying out way before their usual - early departure time. Also, under certain conditions a higher % of eagles would fly out over the Little Tobin lands, making them hard to see.
11		footnote	Where is the PIPO stand north of Mt Dome?

Page	Paragraph	Sentence	Comment
12	1	2	21.3% of the forest stand (not roost trees) were in structure class 3. Also, the 5 structure classifications that I used were adapted from Keen (1943) but are not the same. My structure class 3 is not the same as Keen's and Keen doesn't even have classes 4 & 5. So you may want to leave out the reference to Keen or say "adapted from Keen (1943)."
50	Winter Roost Counts		Again, I believe the counter and his/her familiarity with counting bald eagles at this roost can significantly affect the count. If possible, the same "biologist" should count this roost each time. Bad counts are worse than no counts unless you're trying to document presence or absence only.
51	Timber Stand Sanitation		Bark beetles are in the Three Sisters' roost and might be important in this case if water stress due to overstocking becomes a problem.

U M. Alturas

IN REPLY REFER TO:

United States Department of the Interior

6840
CA-932.51
BLM-CSO-061

BUREAU OF LAND MANAGEMENT
CALIFORNIA STATE OFFICE
2800 Cottage Way
Sacramento, California 95825

JAN 22 1986

Mr. Richard J. Myshak
Regional Director
U.S. Fish & Wildlife Service
Lloyd 500 Bldg., Suite 1692
500 N.E. Multnomah Street
Portland, OR 97232

Dear Mr. Myshak:

The Bureau of Land Management (BLM) California State Office wishes to initiate formal consultation pursuant to part 402 of Chapter IV of Title 50, Code of Federal Regulations, concerning the Draft Mt. Dome Habitat Management Plan. An important component to this plan is the preservation and management of the Mt. Dome Bald Eagle roost.

As this is a multi-agency plan, please consider this a joint consultation on behalf of the Bureau of Land Management and the U.S. Forest Service. However, there is no implied commitment to the plan by agencies other than BLM until the final plan is fully signed.

We believe that this plan will only improve the status of the Bald Eagle in Northern California. Thus, prompt consideration should be possible so that we can acquire all signatures as soon as possible.

If you have questions, please contact Richard R. (Butch) Olendorff at FTS 460-4725 or Paul Roush at (916) 233-4666.

Sincerely,

Ed Hastey

Ed Hastey
State Director

RECEIVED
Alturas R.A.
JAN 24 1986

ROUTE		INITIAL
	AREA MANAGER	
	RANGE STAFF	
	RANGE CON	
	RANGE TECH	
	ENGINEERING	
	GEOLOGIST	
	NAT RES SPEC	
	FORESTER	
✓	WILDLIFE BIOL	PR
	REALTY SPEC	
	FIRE STAFF	
	DRY CREEK	
	OTHER	

Enclosure
As stated

cc:
Gail Kobetich, Sacramento Endangered Species Office
DM, Susanville w/o encl.
AM, Alturas w/o encl.

IN REPLY REFER TO:
6840
CA-932.51

United States Department of the Interior

BUREAU OF LAND MANAGEMENT
CALIFORNIA STATE OFFICE
2800 Cottage Way
Sacramento, California 95825

JAN 23 1986

Memorandum

To: AM, Alturas

From: Deputy State Director, Lands & Renewable Resources

Subject: Mt. Dome Habitat Management Plan

Richard R. (Butch) Olendorff of my staff has reviewed the subject HMP. His comments are on the manuscript (mostly just style and word choice changes). Your biologists are to be commended for the high quality of the document. We will transmit the Section 7 Biological Opinion to you as soon as it is received.

Richard Johnson

1 Enclosure
Encl. 1 - Habitat Management Plan

cc:
DM, Susanville

RECEIVED
Alturas R.A.
JAN 24 1986

ROUTE		INITIAL
	AREA MANAGER	
	RANGE STAFF	
	RANGE CON	
	RANGE TECH	
	ENGINEERING	
	GEOLOGIST	
	NAT RES SPEC	
	FORESTER	
X	WILDLIFE BIOL	
	REALTY SPEC	
	FIRE STAFF	
	DRY CREEK	
	OTHER	

California Bald Eagle Working Team

January 30, 1986

Mr. Richard J. Drehobl, Area Manager
Alturus Resource Area
Bureau of Land Management
P.O. Box 771
Alturus, California 96101

Dear Mr. Drehobl:

Thank you for the opportunity to review your plans for bald eagle management as described in the Mt. Dome Habitat Management Plan (C-020-6840).

Although the entire Bald Eagle Working Team (CBEWT) did not review the plan, I have read through the document and found it to be an excellent plan for actively managing an important bald eagle use area. The objectives and proposed actions appear reasonable and appropriate for this highly sensitive and potentially vulnerable bald eagle nesting and roosting habitat. The BLM and your Resource Area deserve commendation for your effort and insight in designing a long-range Habitat Management Plan for Mt. Dome.

Your Resource Area's recent efforts at managing other important bald eagle nesting territories at Eagle Lake, Baum Lake, and Fall River are also noteworthy. The CBEWT certainly supports and encourages efforts such as yours in managing significant bald eagle habitats.

Sincerely yours,

J. Mark Jenkins
Chairman

cc: Richard R. Olendorff

RECEIVED
Alturas, CA.
FEB 3 1986
BLM
ROUTE
INITIAL
AREA MANAGER
RANGE STAFF
RANGE CON
RANGE TECH
ENGINEERING
GEOLOGIST
NAT RES SPEC
FORESTER
WILDLIFE BIOL
REALTY SPEC
FIRE STAFF
DRY CREEK
OTHER

Members:
J. Mark Jenkins
Chairman
Pacific Gas and Electric Company
W. Dean Carrier
U.S. Forest Service
Phillip J. Detrich
Bureau of Land Management
David L. Harlow
U.S. Fish and Wildlife Service
Ronald M. Jurek
California Department of Fish and Game
Richard R. "Butch" Olendorff
Bureau of Land Management
David O. Smith
California Department of Fish and Game

Address:
3400 Crow Canyon Road
San Ramon, CA 94583
415 820-2000

STATE OF CALIFORNIA—THE RESOURCES AGENCY

GEORGE DEUKMEJIAN, *Governor*

DEPARTMENT OF FORESTRY
6105 Airport Road
Redding, California 96002
(916) 225-2445

2A2

February 3, 1986

Mr. Richard J. Drehobl
Area Manager
United States Department of the Interior
P. O. Box 771
Alturas, California 96101

Dear Mr. Drehobl:

We have reviewed the Mt. Dome Habitat Management Plan for the protection and management of bald eagle roosting and nesting territory. Also, Jack White, Ranger-in-Charge of our Siskiyou Unit has studied the plan and discussed some of the provisions with Paul Rousch. Mr. White is ready to represent CDF for developing the plan of fire management described in the Plan.

CDF is unable to agree to the proposed exclusion of prescribed burning within one mile of the Plan area because there is no basis in law to limit the use of prescribed burning for range management on private lands.

If you have questions or comments, please contact Ranger White at (916)-842-3516 or Resource Manager Bob Malain at this office.

Very truly yours,

by Robert Malain
W. G. Todd
Chief, Region II

RECEIVED
Alturas R.A.

FEB 5 1986

ROUTE / INITIAL

	AREA MANAGER
	RANGE STAFF
	RANGE CON
	RANGE TECH
	ENGINEERING
	GEOLOGIST
	NAT RES SPEC
	FORESTER
	WILDLIFE BIOL
	REALTY SPEC
	FIRE STAFF
	DRY CREEK
	OTHER

dm
cc: Jack White
Don Paulsen

UNITED STATES DEPARTMENT OF AGRICULTURE
FOREST SERVICE
MODOC NATIONAL FOREST
441 NORTH MAIN STREET
P.O. BOX 611
ALTURAS, CA 96101

REPLY TO: 2670

DATE: MAR 12 1986

Bureau of Land Management
ATTN: Richard J. Drehobl
Alturas Resource Area
P.O. Box 771
Alturas, CA 96101

Dear Rich:

We have reviewed the Mount Dome Habitat Management Plan for the bald eagle nesting and wintering area on Mount Dome. We have no suggestions for corrections or additions to the plan. The plan is very thorough and does an excellent job of covering all actions for management of habitat in the area. We would like to compliment you and your staff on the quality of this plan.

The only question we have is that the plan calls for development of a suppression plan before the 1986 fire season. Is this date realistic based on the number of agencies involved? Also, there still seems to be some disagreement over use of retardant aircraft for fire suppression in this area. We feel that the use of aircraft may be reduced in the future if fuel reduction projects are implemented on the mountain; however, until this occurs, we must use aircraft to protect the area in high hazard situations.

William E. Britton

WILLIAM E. BRITTON
Acting Forest Supervisor

RECEIVED
Alturas R.A.
MAR 13 1986

ROUTE / INITIAL

- AREA MANAGER
- RANGE STAFF
- RANGE SCI
- RANGE TECH
- ENGINEERING
- GEOLOGIST
- NAT RES SPEC
- FORESTER
- WILDLIFE BIOL
- REALTY SPEC
- FIRE STAFF
- DRY CREEK
- OTHER

FS-6200-28(7-82)

United States
Department of the Interior

Fish and Wildlife Service
Lloyd 500 Building, Suite 1692
500 N.E. Multnomah Street
Portland, Oregon 97232

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In Reply Refer To: SACramento

March 28, 1986

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MEMORANDUM

TO: State Director, California State Office,
Bureau of Land Management,
2800 Cottage Way, Sacramento, CA 95825

FROM: Assistant Regional Director, Federal Assistance,
Portland, OR (AFA-SE)

SUBJECT: Endangered Species Act Consultation on Mt. Dome Habitat Management Plan, Siskiyou County (Case No. 1-1-86-F-34)

This memorandum responds to your January 22, 1986 request for formal consultation pursuant to Section 7 of the Endangered Species Act of 1973, as amended. Your request was received on January 23. At issue is the Mt. Dome Habitat Management Plan (HMP) and its possible effects on the endangered bald eagle (Haliaeetus leucocephalus). Since lands of both the BLM and the Forest Service are involved, the consultation was submitted as a joint request pursuant to our Interagency Cooperation Regulations with the BLM serving as the lead agency. Included with your request was a copy of the subject management plan. The HMP, information in our files, and verbal communications with your staff provided the basis for this consultation.

Project Description

The Mt. Dome HMP provides guidance for the maintenance and enhancement of bald eagle habitat within the designated management area boundary. The management plan primary objectives are to prevent loss of timber to wildfire, improve fire suppression capabilities, improve timber stand characteristics, provide for ponderosa pine recruitment, and prevent human disturbance of the management area. To implement these goals, the HMP calls for 1) the development of a special operating plan for wildfire suppression on Mt. Dome, 2) the construction of two helispots to facilitate deployment of fire suppression crews and equipment, 3) the enclosure of the Mt. Dome timber stand with fuel breaks, 4) the reduction of fuel loading by white fir control, 5) the control or eradication of 30 acres of brush within the HMP, 6) the initiation of nursery rearing of seeds collected from the Mt. Dome timber stand for future planting, 7)

the planting of 105 acres of the HMP with ponderosa pine seedlings, and 8) the implementation of a year around public closure of the HMP.

Effects of the Action

The Mt. Dome HMP is intended to provide protection of a winter roost that supports up to 250 bald eagles in winter and an occupied bald eagle nesting territory. The plan provides for the long-term maintenance of the timber stand through silvicultural practices designed to perpetuate mature ponderosa pine. These include the plantings of ponderosa pine seedlings and control of brush and white fur. The establishment of a zone closed to human activity year around will provide adequate protection from disturbance of roosting and nesting bald eagles. Implementation of this plan will likely benefit bald eagles.

Cumulative Effects

Cumulative effects are those effects of state and private actions which are reasonably certain to occur prior to completion of the Federal action subject to consultation. The Mt. Dome HMP is entirely under Federal ownership. Thus, any action will be subject to Section 7 of the Endangered Species Act.

Biological Opinion

It is our Biological Opinion that implementation of the Mt. Dome Habitat Management Plan will promote the conservation of the endangered bald eagle.

Incidental Take

Section 9 of the ESA prohibits any taking (killing, harassment, or harming) of listed species without special exemption. Under the terms of Section 7(b)(4) and 7(o)(2) of the Act, taking that is incidental to, and not a purpose of, the agency action (in this case the Mt. Dome HMP) is not considered taking within the terms of the Act, provided that such taking is in compliance with the measures, terms, and conditions of this Incidental Take statement.

Implementation of the HMP includes monitoring of eagles, silvicultural activities, etc., that may result in periodic disturbance to bald eagles, but not to a degree that would constitute take of the listed species. Thus, we anticipate the level of incidental take for bald eagles will be 0 (zero). No

reasonable and prudent measures are required to minimize incidental take. The following term and condition shall be implemented:

1) If any injured or dead bald eagle is recovered, the Fish and Wildlife Service, Division of Law Enforcement shall be notified immediately. The Service will provide guidance for proper disposition of listed species.

2) the causative action shall cease immediately and BLM shall request reinitiation of formal consultation.

This concludes formal consultation on this project. If the HMP is significantly modified, or if new information on listed species or impacts to listed species becomes available, then reinitiation of consultation should be considered.

We commend your staff for the development of such a thorough management plan.

cc:
Mr. Jack C. Parnell, Director, California Dept. of Fish and Game, 1416 Ninth Street, Sacramento, CA 95814 (Attn: Don Lollock)
Mr. Ron Jurek, California Dept. of Fish and Game, 1416 Ninth St., Sacramento, CA 95814
Project Leader, Endangered Species Office, Sacramento, CA (SESO)
Field Supervisor, Ecological Services, Sacramento, CA (ES-S)
Regional Forester, U.S. Forest Service, 630 Sansome St., San Francisco, CA 94111

RSwanson:an/MTDMEHMP.DAV/Sec. 7 Telecom Pg(3)

IN REPLY REFER TO:

6840
(CA-932.5)

United States Department of the Interior

BUREAU OF LAND MANAGEMENT
CALIFORNIA STATE OFFICE
2800 Cottage Way
Sacramento, California 95825

APR 11 1986

Memorandum

To: District Manager, Susanville

From: Deputy State Director, Lands and Renewable Resources

Subject: Mt. Dome Habitat Management Plan Endangered Species Act Section 7 Consultation

Enclosed is the final biological opinion from the U.S. Fish and Wildlife Service concerning the subject consultation. It is a "no jeopardy" opinion.

Good work! Richard J. John

1 Enclosure:
Encl. 1 - As stated

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CENTRAL FILE OFFICE

1 Information
2 Lead Action

NEPA DOCUMENTATION SHEET

CEE No. CA-027-88-05 *Minor EA No. _____ Admin. Determinstion No. _____

Project Title: Mt. Dome Habitat Management Plan

*Project Description: Reducing fire hazard, improving fire suppression capabilities, brush control, timber stand improvement in bald eagle winter roost.

Location: T. 46 E., R. 2 E., Section 24

*Need for Project: Current threat of wildfire and deteriorating timber stand.

Check one or more:

☒ This project qualifies as a potential categorical exclusion under 516 DM 6, Appendix 5.4 H-4.

☐ This project is not on the categorical exclusion list and requires an EA.

☐ This project is covered under the following NEPA document _____

The following concerns (see 516 DM 6, Appendix 2 for complete wording of #'s 1-10) have been reviewed. (Surname verifies review. If concern applies to project, the concern must be explained in the space provided. Additional concerns may be added. Use backside of sheet, if necessary. Specialist must surname #'s 7 and 8, the others may be surnamed by the preparer.)

Concern	Last Name	Explanation
1. Public health and safety	Lovell	
2. Unique areas or resources	Lovell	
3. Controversiality	Lovell	
4. Uncertain or unique risks	Lovell	
5. Precedent setting	Lovell	
6. Major cumulative impacts	Lovell	
7. National Register of Historic Places	Hampton	
8. T&E Species	Hampton	
9. Floodplains, wetlands, and F&G Coord. Act	Lovell	
10. Statute violations	Lovell	
*11. Nonconformance with RMP/ MFP (cite page or section of plan)	Lovell	

STIPULATIONS/RESOLUTIONS OF CONCERNS:
(Must indicate concern # and where each stipulation is documented. Use backside if necessary)

*ALTERNATIVES CONSIDERED: None

*PARTIES/AGENCIES CONSULTED: See Appendix XI

PREPARER: Carol Barnes 12-7-87 Date

Environmental Coordinator 12-7-87 Date
ENVIRONMENTAL COORDINATOR

DECISION RECORD

I have reviewed this NEPA documentation sheet with regard to the concerns listed including the explanation and resolution of any potentially important impacts and have determined that the project with the mitigation specified would be beneficial in the context of multiple use management and would not have any significant impacts on the human environment. Therefore, it is my decision to implement the project with any mitigation listed above.

Area Manager 12-7-87 Date

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